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ANALYTICAL REPORT

PREPARED FOR

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City & County of Honolulu
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JOB DESCRIPTION

RED-HILL
Weekly PFAS
RUSH Weekly Red Hill

JOB NUMBER

380-111914-1

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



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Definitions/Glossary

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

Job ID: 380-111914-1
SDG: Weekly PFAS

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Analyte was found in the field reagent blank.
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: 380-111914-1

Job ID: 380-111914-1

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Job Narrative 380-111914-1

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 9/6/2024 10:33 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 2.6°C.

PFAS

Method 533: The following QC issues in preparation batch 380-107468 and analytical batch 380-107808 were observed: Analyte Perfluorohexanesulfonic acid (PFHxS), Perfluorohexanoic acid (PFHxA), Perfluorooctanesulfonic acid (PFOS), Perfluorooctanoic acid (PFOA) and Perfluoropentanoic acid (PFPeA) detected greater than 1/3 MRL in field reagent blank FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-111914-3). Associated native samples is ND for Perfluorohexanesulfonic acid (PFHxS), Perfluorohexanoic acid (PFHxA), Perfluorooctanesulfonic acid (PFOS), Perfluorooctanoic acid (PFOA) and Perfluoropentanoic acid (PFPeA). No impact to the sample ND results.

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: 380-111914-1
SDG: Weekly PFAS

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
(331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-111914-1

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
(331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-111914-2

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)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.4		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: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-111914-3

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-111914-4

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
(331-203-TP400)**

Lab Sample ID: 380-111914-1

Date Collected: 09/04/24 10:25

Matrix: Drinking Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:07	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	90		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C6 PFDA	96		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C5 PFHxA	97		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C4 PFHpA	97		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C8 PFOA	94		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C9 PFNA	98		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C7 PFUnA	95		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C2 PFDoA	98		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C4 PFBA	99		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C5 PFPeA	99		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C3 PFBS	106		50 - 200			09/09/24 15:21	09/11/24 13:07	1
13C3 PFHxS	109		50 - 200			09/09/24 15:21	09/11/24 13:07	1

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Client Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
(331-203-TP400)**

Lab Sample ID: 380-111914-1

Date Collected: 09/04/24 10:25

Matrix: Drinking Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	110		50 - 200	09/09/24 15:21	09/11/24 13:07	1
13C2-4:2-FTS	122		50 - 200	09/09/24 15:21	09/11/24 13:07	1
13C2-6:2-FTS	125		50 - 200	09/09/24 15:21	09/11/24 13:07	1
13C2-8:2-FTS	112		50 - 200	09/09/24 15:21	09/11/24 13:07	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		09/10/24 12:28	09/11/24 19:03	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130	09/10/24 12:28	09/11/24 19:03	1
13C2 PFHxA	122		70 - 130	09/10/24 12:28	09/11/24 19:03	1
13C2 PFDA	122		70 - 130	09/10/24 12:28	09/11/24 19:03	1
13C3-GenX	117		70 - 130	09/10/24 12:28	09/11/24 19:03	1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
(331-206-TP065)**

Lab Sample ID: 380-111914-2

Date Collected: 09/04/24 10:02

Matrix: Drinking Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1

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Client Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
(331-206-TP065)**

Lab Sample ID: 380-111914-2

Date Collected: 09/04/24 10:02

Matrix: Drinking Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluoropentanoic acid (PFPeA)	2.5		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	90		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C6 PFDA	88		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C5 PFHxA	94		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C4 PFHpA	94		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C8 PFOA	89		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C9 PFNA	90		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C7 PFUnA	93		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C2 PFDoA	92		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C4 PFBA	100		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C5 PFPeA	104		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C3 PFBS	108		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C3 PFHxS	106		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C8 PFOS	107		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C2-4:2-FTS	122		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C2-6:2-FTS	124		50 - 200	09/09/24 15:21	09/11/24 13:17	1
13C2-8:2-FTS	112		50 - 200	09/09/24 15:21	09/11/24 13:17	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
(331-206-TP065)**

Lab Sample ID: 380-111914-2

Date Collected: 09/04/24 10:02

Matrix: Drinking Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorohexanoic acid (PFHxA)	2.4		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	119		70 - 130	09/10/24 12:28	09/11/24 19:13	1
13C2 PFHxA	114		70 - 130	09/10/24 12:28	09/11/24 19:13	1
13C2 PFDA	118		70 - 130	09/10/24 12:28	09/11/24 19:13	1
13C3-GenX	112		70 - 130	09/10/24 12:28	09/11/24 19:13	1

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-111914-3

Date Collected: 09/04/24 10:25

Matrix: Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-111914-3

Date Collected: 09/04/24 10:25

Matrix: Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	<2.0	B	2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluorohexanoic acid (PFHxA)	<2.0	B	2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluorooctanesulfonic acid (PFOS)	<2.0	B	2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluorooctanoic acid (PFOA)	<2.0	B	2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluoropentanoic acid (PFPeA)	<2.0	B	2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:27	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C6 PFDA	94		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C5 PFHxA	98		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C4 PFHpA	100		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C8 PFOA	97		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C9 PFNA	94		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C7 PFUnA	95		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C2 PFDoA	94		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C4 PFBA	102		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C5 PFPeA	103		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C3 PFBS	105		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C3 PFHxS	106		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C8 PFOS	105		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C2-4:2-FTS	122		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C2-6:2-FTS	123		50 - 200			09/09/24 15:21	09/11/24 13:27	1
13C2-8:2-FTS	111		50 - 200			09/09/24 15:21	09/11/24 13:27	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		09/10/24 12:28	09/11/24 19:24	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1

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Client Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-111914-3

Date Collected: 09/04/24 10:25

Matrix: Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	118		70 - 130			09/10/24 12:28	09/11/24 19:24	1
13C2 PFHxA	112		70 - 130			09/10/24 12:28	09/11/24 19:24	1
13C2 PFDA	114		70 - 130			09/10/24 12:28	09/11/24 19:24	1
13C3-GenX	108		70 - 130			09/10/24 12:28	09/11/24 19:24	1

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-111914-4

Date Collected: 09/04/24 10:02

Matrix: Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-111914-4

Date Collected: 09/04/24 10:02

Matrix: Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/09/24 15:21	09/11/24 13:36	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	99		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C6 PFDA	102		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C5 PFHxA	108		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C4 PFHpA	109		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C8 PFOA	106		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C9 PFNA	104		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C7 PFUnA	101		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C2 PFDoA	101		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C4 PFBA	108		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C5 PFPeA	108		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C3 PFBS	101		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C3 PFHxS	103		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C8 PFOS	105		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C2-4:2-FTS	115		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C2-6:2-FTS	119		50 - 200	09/09/24 15:21	09/11/24 13:36	1
13C2-8:2-FTS	108		50 - 200	09/09/24 15:21	09/11/24 13:36	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		09/10/24 12:28	09/11/24 19:35	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-111914-4

Date Collected: 09/04/24 10:02

Matrix: Water

Date Received: 09/06/24 10:33

PWSID Number: HI0000331

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		09/10/24 12:28	09/11/24 19:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/10/24 12:28	09/11/24 19:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	117		70 - 130			09/10/24 12:28	09/11/24 19:35	1
13C2 PFHxA	117		70 - 130			09/10/24 12:28	09/11/24 19:35	1
13C2 PFDA	118		70 - 130			09/10/24 12:28	09/11/24 19:35	1
13C3-GenX	112		70 - 130			09/10/24 12:28	09/11/24 19:35	1

Action Limit Summary

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

Job ID: 380-111914-1
SDG: Weekly PFAS

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
(331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-111914-1

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)	<2.0		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: HALAWA WELLS UNITS 1 & 2 P1
(331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-111914-2

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)	2.3		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)	2.3		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: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-111914-3

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

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Action Limit Summary

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

Job ID: 380-111914-1
SDG: Weekly PFAS

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400) (Continued)
PWSID Number: HI0000331

Lab Sample ID: 380-111914-3

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			
Perfluorohexanesulfonic acid (PFHxS)	<2.0	B	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	B	ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0	B	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
(331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-111914-4

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

Surrogate Summary

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

Job ID: 380-111914-1
 SDG: Weekly PFAS

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-111914-1	AIEA WELLS PUMPS 1&2 (260)	113	122	122	117
380-111914-2	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)	119	114	118	112

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-111914-3	FB: AIEA WELLS PUMPS 1&2 (	118	112	114	108
380-111914-4	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	117	117	118	112
380-111920-B-1-A MS	Matrix Spike	111	118	115	112
380-111920-C-1-A MSD	Matrix Spike Duplicate	118	125	124	121
LCS 380-107605/18-A	Lab Control Sample	107	110	117	110
MBL 380-107605/16-A	Method Blank	106	108	110	100
MRL 380-107605/17-A	Lab Control Sample	119	112	118	109

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: 380-111914-1
SDG: Weekly PFAS

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-111914-1	AIEA WELLS PUMPS 1&2 (260)	90	96	97	97	94	98	95	98
380-111914-2	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)	90	88	94	94	89	90	93	92

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-111914-1	AIEA WELLS PUMPS 1&2 (260)	99	99	106	109	110	122	125	112
380-111914-2	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)	100	104	108	106	107	122	124	112

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-111914-3	FB: AIEA WELLS PUMPS 1&2 (	96	94	98	100	97	94	95	94
380-111914-4	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	99	102	108	109	106	104	101	101
380-111920-H-1-A MS	Matrix Spike	76	86	85	86	85	86	91	95
380-111920-I-1-A MSD	Matrix Spike Duplicate	65	87	73	75	79	80	92	96
LCS 380-107468/22-A	Lab Control Sample	110	104	111	110	107	109	105	104
MBL 380-107468/20-A	Method Blank	99	103	106	108	106	106	99	99
MRL 380-107468/21-A	Lab Control Sample	94	101	106	107	106	104	100	100

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-111914-3	FB: AIEA WELLS PUMPS 1&2 (	102	103	105	106	105	122	123	111
380-111914-4	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	108	108	101	103	105	115	119	108
380-111920-H-1-A MS	Matrix Spike	82	84	106	107	108	120	123	107
380-111920-I-1-A MSD	Matrix Spike Duplicate	75	75	109	109	110	118	137	110
LCS 380-107468/22-A	Lab Control Sample	110	114	111	108	106	117	121	112

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Isotope Dilution Summary

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

Job ID: 380-111914-1
 SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
MBL 380-107468/20-A	Method Blank	106	109	109	106	105	115	114	102
MRL 380-107468/21-A	Lab Control Sample	110	113	104	103	104	119	118	104

Surrogate Legend

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

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-107468/20-A
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107468

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		09/09/24 15:21	09/11/24 09:56	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/09/24 15:21	09/11/24 09:56	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	99		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C6 PFDA	103		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C5 PFHxA	106		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C4 PFHpA	108		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C8 PFOA	106		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C9 PFNA	106		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C7 PFUnA	99		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C2 PFDoA	99		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C4 PFBA	106		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C5 PFPeA	109		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C3 PFBS	109		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C3 PFHxS	106		50 - 200	09/09/24 15:21	09/11/24 09:56	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-107468/20-A
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107468

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	105		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C2-4:2-FTS	115		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C2-6:2-FTS	114		50 - 200	09/09/24 15:21	09/11/24 09:56	1
13C2-8:2-FTS	102		50 - 200	09/09/24 15:21	09/11/24 09:56	1

Lab Sample ID: LCS 380-107468/22-A
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107468

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	108		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	110		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	107		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	108		ng/L		89	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	110		ng/L		91	70 - 130
Perfluorodecanoic acid (PFDA)	120	111		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	120	111		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	108		ng/L		90	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	108		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	120	109		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	120	106		ng/L		88	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	111		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	120	111		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	111		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	120	114		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	112		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	114		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	113		ng/L		93	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	123		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	105		ng/L		87	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	113		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	107		ng/L		89	70 - 130
Perfluoropentanoic acid (PFPeA)	120	108		ng/L		90	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	114		ng/L		95	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-107468/22-A
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107468

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	111		ng/L		92	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	110		50 - 200				
13C6 PFDA	104		50 - 200				
13C5 PFHxA	111		50 - 200				
13C4 PFHpA	110		50 - 200				
13C8 PFOA	107		50 - 200				
13C9 PFNA	109		50 - 200				
13C7 PFUnA	105		50 - 200				
13C2 PFDoA	104		50 - 200				
13C4 PFBA	110		50 - 200				
13C5 PFPeA	114		50 - 200				
13C3 PFBS	111		50 - 200				
13C3 PFHxS	108		50 - 200				
13C8 PFOS	106		50 - 200				
13C2-4:2-FTS	117		50 - 200				
13C2-6:2-FTS	121		50 - 200				
13C2-8:2-FTS	112		50 - 200				

Lab Sample ID: MRL 380-107468/21-A
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107468

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-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	1.83	J	ng/L		91	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.02	J	ng/L		101	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.27	J	ng/L		113	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.96	J	ng/L		98	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	1.98	J	ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.23	J	ng/L		111	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.95	J	ng/L		97	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.16	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.20	J	ng/L		110	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.98	J	ng/L		98	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.98	J	ng/L		99	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-107468/21-A
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107468

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.06	J	ng/L		103	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.03	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.50	J	ng/L		124	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.53	J	ng/L		126	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.91	J	ng/L		95	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.02	J	ng/L		101	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.20	J	ng/L		110	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.97	J	ng/L		98	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	94		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	106		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	100		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	110		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	119		50 - 200
13C2-6:2-FTS	118		50 - 200
13C2-8:2-FTS	104		50 - 200

Lab Sample ID: 380-111920-H-1-A MS
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 107468

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		60.2	52.1		ng/L		86	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	53.3		ng/L		88	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	52.8		ng/L		88	70 - 130

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111920-H-1-A MS
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 107468

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.2	55.1		ng/L		91	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	60.0		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	57.2		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	57.4		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	57.5		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	57.3		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	56.3		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	57.4		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	56.4		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	56.8		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	58.5		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	57.7		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	59.2		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	61.8		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	57.6		ng/L		96	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		60.2	52.3		ng/L		87	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	55.9		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	55.5		ng/L		92	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	52.7		ng/L		87	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	56.0		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	56.8		ng/L		94	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	56.2		ng/L		93	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	76		50 - 200
13C6 PFDA	86		50 - 200
13C5 PFHxA	85		50 - 200
13C4 PFHpA	86		50 - 200
13C8 PFOA	85		50 - 200
13C9 PFNA	86		50 - 200
13C7 PFUnA	91		50 - 200
13C2 PFDoA	95		50 - 200
13C4 PFBA	82		50 - 200
13C5 PFPeA	84		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	108		50 - 200

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111920-H-1-A MS
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 107468

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	120		50 - 200
13C2-6:2-FTS	123		50 - 200
13C2-8:2-FTS	107		50 - 200

Lab Sample ID: 380-111920-I-1-A MSD
Matrix: Water
Analysis Batch: 107808

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 107468

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	55.2		ng/L		92	70 - 130	6	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	53.8		ng/L		89	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	53.4		ng/L		89	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	59.6		ng/L		99	70 - 130	8	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	61.0		ng/L		101	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	57.2		ng/L		95	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	55.5		ng/L		92	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	58.8		ng/L		98	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	57.9		ng/L		96	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	56.8		ng/L		94	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	57.6		ng/L		96	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	57.8		ng/L		96	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	57.8		ng/L		96	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	56.9		ng/L		95	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	56.8		ng/L		94	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	59.4		ng/L		99	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	59.5		ng/L		99	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	57.2		ng/L		95	70 - 130	1	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	55.0		ng/L		91	70 - 130	5	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	57.3		ng/L		95	70 - 130	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	54.3		ng/L		90	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	54.1		ng/L		90	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	58.7		ng/L		97	70 - 130	5	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	58.1		ng/L		97	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	59.1		ng/L		98	70 - 130	5	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	65		50 - 200
13C6 PFDA	87		50 - 200
13C5 PFHxA	73		50 - 200
13C4 PFHpA	75		50 - 200
13C8 PFOA	79		50 - 200
13C9 PFNA	80		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	96		50 - 200
13C4 PFBA	75		50 - 200
13C5 PFPeA	75		50 - 200
13C3 PFBS	109		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	118		50 - 200
13C2-6:2-FTS	137		50 - 200
13C2-8:2-FTS	110		50 - 200

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

Lab Sample ID: MBL 380-107605/16-A
Matrix: Water
Analysis Batch: 107835

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107605

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/10/24 12:28	09/11/24 17:25	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	106		70 - 130			09/10/24 12:28	09/11/24 17:25	1
13C2 PFHxA	108		70 - 130			09/10/24 12:28	09/11/24 17:25	1
13C2 PFDA	110		70 - 130			09/10/24 12:28	09/11/24 17:25	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-107605/16-A
Matrix: Water
Analysis Batch: 107835

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107605

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	100		70 - 130	09/10/24 12:28	09/11/24 17:25	1

Lab Sample ID: LCS 380-107605/18-A
Matrix: Water
Analysis Batch: 107835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107605

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	49.9	50.0		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	49.9	51.7		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.9	53.9		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.9	50.6		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.9	50.7		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	49.9	52.0		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	49.9	51.0		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	49.9	52.1		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	49.9	50.7		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.9	51.2		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.9	50.0		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.9	49.9		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	49.9	53.5		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	49.9	57.2		ng/L		115	70 - 130
Perfluorotridecanoic acid (PFTrDA)	49.9	51.8		ng/L		104	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	49.9	50.6		ng/L		101	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.9	51.1		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.9	48.0		ng/L		96	70 - 130

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	107		70 - 130
13C2 PFHxA	110		70 - 130
13C2 PFDA	117		70 - 130
13C3-GenX	110		70 - 130

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-107605/17-A
Matrix: Water
Analysis Batch: 107835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107605

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.95	J	ng/L		98	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.22	J	ng/L		111	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.25	J	ng/L		112	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.10	J	ng/L		105	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.33	J	ng/L		116	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.97	J	ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.11	J	ng/L		105	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.24	J	ng/L		112	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.10	J	ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.12	J	ng/L		106	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	119		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	118		70 - 130
13C3-GenX	109		70 - 130

Lab Sample ID: 380-111920-B-1-A MS
Matrix: Water
Analysis Batch: 107835

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 107605

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	49.7		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	52.3		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	52.3		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	49.6		ng/L		99	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111914-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111920-B-1-A MS
Matrix: Water
Analysis Batch: 107835

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 107605

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec Limits	
				Result	Qualifier				Limits	Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	48.7		ng/L		97	70 - 130	
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	52.0		ng/L		104	70 - 130	
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	51.6		ng/L		103	70 - 130	
Perfluorooctanoic acid (PFOA)	<2.0		50.2	53.0		ng/L		105	70 - 130	
Perfluorodecanoic acid (PFDA)	<2.0		50.2	51.0		ng/L		102	70 - 130	
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	52.0		ng/L		103	70 - 130	
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	50.3		ng/L		100	70 - 130	
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	52.0		ng/L		104	70 - 130	
Perfluorononanoic acid (PFNA)	<2.0		50.2	53.2		ng/L		106	70 - 130	
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	57.0		ng/L		114	70 - 130	
Perfluorotridecanoic acid (PFTTrDA)	<2.0		50.2	50.4		ng/L		100	70 - 130	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	51.5		ng/L		103	70 - 130	
11-Chloroeicosasfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	50.0		ng/L		100	70 - 130	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	51.4		ng/L		102	70 - 130	
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
d5-NEtFOSAA	111		70 - 130							
13C2 PFHxA	118		70 - 130							
13C2 PFDA	115		70 - 130							
13C3-GenX	112		70 - 130							

Lab Sample ID: 380-111920-C-1-A MSD
Matrix: Water
Analysis Batch: 107835

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 107605

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	
				Result	Qualifier				Limits	RPD	Limit	Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.1	51.2		ng/L		102	70 - 130	3	30	
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.1	52.1		ng/L		104	70 - 130	0	30	
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	52.2		ng/L		104	70 - 130	0	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	50.2		ng/L		100	70 - 130	1	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	49.4		ng/L		99	70 - 130	1	30	
Perfluorohexanoic acid (PFHxA)	<2.0		50.1	52.7		ng/L		105	70 - 130	1	30	
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	51.2		ng/L		102	70 - 130	1	30	
Perfluorooctanoic acid (PFOA)	<2.0		50.1	51.9		ng/L		104	70 - 130	2	30	
Perfluorodecanoic acid (PFDA)	<2.0		50.1	50.5		ng/L		101	70 - 130	1	30	

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-111914-1
SDG: Weekly PFAS

LCMS

Prep Batch: 107468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111914-1	AIEA WELLS PUMPS 1&2 (260) P2 (331-203-TP	Total/NA	Drinking Water	533	
380-111914-2	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP0	Total/NA	Drinking Water	533	
380-111914-3	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	533	
380-111914-4	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	533	
MBL 380-107468/20-A	Method Blank	Total/NA	Water	533	
LCS 380-107468/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-107468/21-A	Lab Control Sample	Total/NA	Water	533	
380-111920-H-1-A MS	Matrix Spike	Total/NA	Water	533	
380-111920-I-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 107605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111914-1	AIEA WELLS PUMPS 1&2 (260) P2 (331-203-TP	Total/NA	Drinking Water	537.1 DW	
380-111914-2	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP0	Total/NA	Drinking Water	537.1 DW	
380-111914-3	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1 DW	
380-111914-4	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	537.1 DW	
MBL 380-107605/16-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-107605/18-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-107605/17-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-111920-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-111920-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 107808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111914-1	AIEA WELLS PUMPS 1&2 (260) P2 (331-203-TP	Total/NA	Drinking Water	533	107468
380-111914-2	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP0	Total/NA	Drinking Water	533	107468
380-111914-3	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	533	107468
380-111914-4	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	533	107468
MBL 380-107468/20-A	Method Blank	Total/NA	Water	533	107468
LCS 380-107468/22-A	Lab Control Sample	Total/NA	Water	533	107468
MRL 380-107468/21-A	Lab Control Sample	Total/NA	Water	533	107468
380-111920-H-1-A MS	Matrix Spike	Total/NA	Water	533	107468
380-111920-I-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	107468

Analysis Batch: 107835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111914-1	AIEA WELLS PUMPS 1&2 (260) P2 (331-203-TP	Total/NA	Drinking Water	537.1	107605
380-111914-2	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP0	Total/NA	Drinking Water	537.1	107605
380-111914-3	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1	107605
380-111914-4	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	537.1	107605
MBL 380-107605/16-A	Method Blank	Total/NA	Water	537.1	107605
LCS 380-107605/18-A	Lab Control Sample	Total/NA	Water	537.1	107605
MRL 380-107605/17-A	Lab Control Sample	Total/NA	Water	537.1	107605
380-111920-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	107605
380-111920-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	107605

Lab Chronicle

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

Job ID: 380-111914-1
SDG: Weekly PFAS

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
(331-203-TP400)**

Lab Sample ID: 380-111914-1

Date Collected: 09/04/24 10:25

Matrix: Drinking Water

Date Received: 09/06/24 10:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107468	N8NE	EA POM	09/09/24 15:21
Total/NA	Analysis	533		1	107808	SZ9R	EA POM	09/11/24 13:07
Total/NA	Prep	537.1 DW			107605	G9MN	EA POM	09/10/24 12:28
Total/NA	Analysis	537.1		1	107835	Y5FM	EA POM	09/11/24 19:03

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
(331-206-TP065)**

Lab Sample ID: 380-111914-2

Date Collected: 09/04/24 10:02

Matrix: Drinking Water

Date Received: 09/06/24 10:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107468	N8NE	EA POM	09/09/24 15:21
Total/NA	Analysis	533		1	107808	SZ9R	EA POM	09/11/24 13:17
Total/NA	Prep	537.1 DW			107605	G9MN	EA POM	09/10/24 12:28
Total/NA	Analysis	537.1		1	107835	Y5FM	EA POM	09/11/24 19:13

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-111914-3

Date Collected: 09/04/24 10:25

Matrix: Water

Date Received: 09/06/24 10:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107468	N8NE	EA POM	09/09/24 15:21
Total/NA	Analysis	533		1	107808	SZ9R	EA POM	09/11/24 13:27
Total/NA	Prep	537.1 DW			107605	G9MN	EA POM	09/10/24 12:28
Total/NA	Analysis	537.1		1	107835	Y5FM	EA POM	09/11/24 19:24

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-111914-4

Date Collected: 09/04/24 10:02

Matrix: Water

Date Received: 09/06/24 10:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107468	N8NE	EA POM	09/09/24 15:21
Total/NA	Analysis	533		1	107808	SZ9R	EA POM	09/11/24 13:36
Total/NA	Prep	537.1 DW			107605	G9MN	EA POM	09/10/24 12:28
Total/NA	Analysis	537.1		1	107835	Y5FM	EA POM	09/11/24 19:35

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: 380-111914-1
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
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Method Summary

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

Job ID: 380-111914-1
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: 380-111914-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-111914-1	AIEA WELLS PUMPS 1&2 (260) P2 (331-203-TP400)	Drinking Water	09/04/24 10:25	09/06/24 10:33	HI0000331
380-111914-2	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)	Drinking Water	09/04/24 10:02	09/06/24 10:33	HI0000331
380-111914-3	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	09/04/24 10:25	09/06/24 10:33	HI0000331
380-111914-4	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Water	09/04/24 10:02	09/06/24 10:33	HI0000331

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

Chain of Custody Record



Environment Testing
 America

Client Information		Sampler: bailey		Lab PM: Arada, Rachelle		Carrier Tracking Net(s)		COC No: 380-27941-2757 2	
Client Contact: Dr Ron Fenstermacher		Phone: +1 808 748 5840		E-Mail: Rachelle.Arada@et.euronisus.com		State of Origin:		Page: Page 2 of 2	
Company: City & County of Honolulu		PWSID:		Analysis Requested		Total Number of Containers		Job #:	
Address: 630 South Beretania Street; Chemistry Lab		Due Date Requested		Perform MS/MSD (Yes or No)		533 - All Analytes		Preservation Codes	
City: Honolulu		TAT Requested (days)		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs		57 1 DW_PREC - 537 1 Full List		A - HCL B - NaOH C - AsNaO2 D - Zn Acetate E - Nitric Acid F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other	
State, Zip: HI, 96843		Compliance Project: Δ No		8015B_DRD_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18		525.2_PREC - (MOD) 525plus PLUS TICs		M - Hexane N - None O - AsNaO2 P - Na2SO4 Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Y - Trizma Z - other (specify)	
Phone: 808-748-5091 (tel)		PO #: C20525101 exp 05312023		8015B_GRO_LL - (MOD) GRO		3 3		Special Instructions/Note:	
Email: rfenstermacher@hbws.org		WO #:		8015B_GRO_LL - (MOD) GRO		3 3		chlorinated 9/14/24 W	
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111		Field Filtered Sample (Yes or No)		1 1		chlorinated	
Site:		SSOW#:		Matrix (W=water, S=solid, O=soil, T=tissue, A=air)		1 1			
Sample Identification		Sample Date		Sample Type (C=Comp, G=grab)		Preservation Code			
AIEA WELLS PUMPS 1&2 (260) PZ		4-Sep-2024		G		Water			
HALAWA WELLS UNITS 1&2 PI		4-Sep-2024		G		Water			
FB AIEA WELLS PUMPS 1&2 (260)		4-Sep-2024		1025				380-111914 COC	
FB HALAWA WELLS UNITS 1&2		4-Sep-2024		1002					
Possible Hazard Identification		Polson B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological <input type="checkbox"/>		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/>		Deliverable Requested: I, II, III, IV Other (specify)		Special Instructions/QC Requirements:		Method of Shipment: FED EX 7384 0132 6480			
Empty Kit Relinquished by:		Date/Time: 06 Sept 2024 1400		Received by: G. RETNER		Date/Time: 09 06 2024 10:53		Company: EEAP	
Relinquished by:		Date/Time:		Received by:		Date/Time:		Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks: (751A) 2.7°-0.1°=2.6° 6BL		Date/Time:		Company:	



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-111914-1
SDG Number: Weekly PFAS

Login Number: 111914
List Number: 1
Creator: Segura, Ryan

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").	True	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

