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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
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Honolulu, Hawaii 96843

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Well P1

JOB NUMBER

380-191524-1

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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 Drinking Water and Wastewater West, 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: 380-191524-1
SDG: PFAS: Halawa Well P1

Qualifiers

LCMS

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 380-191524-1

Job ID: 380-191524-1

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Job Narrative 380-191524-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt

The samples were received on 1/9/2026 10:02 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 2.8°C.

PFAS

EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results:HALAWA WELL P1 (380-191524-1). (XWB4)

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

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Detection Summary

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

Client Sample ID: HALAWA WELL P1

Lab Sample ID: 380-191524-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.9		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.1		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: HALAWA WELL P1 Blank

Lab Sample ID: 380-191524-2

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: 380-191524-1
SDG: PFAS: Halawa Well P1

Client Sample ID: HALAWA WELL P1

Lab Sample ID: 380-191524-1

Date Collected: 01/07/26 10:35

Matrix: Water

Date Received: 01/09/26 10:02

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		01/10/26 10:32	01/11/26 16:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 16:55	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	83		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C6 PFDA	92		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C5 PFHxA	88		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C4 PFHpA	92		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C8 PFOA	95		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C9 PFNA	92		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C7 PFUnA	91		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C2 PFDoA	93		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C4 PFBA	97		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C5 PFPeA	90		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C3 PFBS	106		50 - 200			01/10/26 10:32	01/11/26 16:55	1
13C3 PFHxS	105		50 - 200			01/10/26 10:32	01/11/26 16:55	1

Client Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

Client Sample ID: HALAWA WELL P1

Lab Sample ID: 380-191524-1

Date Collected: 01/07/26 10:35

Matrix: Water

Date Received: 01/09/26 10:02

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	101		50 - 200	01/10/26 10:32	01/11/26 16:55	1
13C2-4:2-FTS	133		50 - 200	01/10/26 10:32	01/11/26 16:55	1
13C2-6:2-FTS	123		50 - 200	01/10/26 10:32	01/11/26 16:55	1
13C2-8:2-FTS	125		50 - 200	01/10/26 10:32	01/11/26 16:55	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		01/10/26 06:32	01/10/26 23:54	1
Perfluorooctanesulfonic acid (PFOS)	2.9		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluorohexanesulfonic acid (PFHxS)	3.1		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/10/26 06:32	01/10/26 23:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			01/10/26 06:32	01/10/26 23:54	1
13C2 PFHxA	107		70 - 130			01/10/26 06:32	01/10/26 23:54	1
13C2 PFDA	100		70 - 130			01/10/26 06:32	01/10/26 23:54	1
13C3-GenX	101		70 - 130			01/10/26 06:32	01/10/26 23:54	1

Client Sample ID: HALAWA WELL P1 Blank

Lab Sample ID: 380-191524-2

Date Collected: 01/07/26 10:35

Matrix: Water

Date Received: 01/09/26 10:02

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1

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Client Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

Client Sample ID: HALAWA WELL P1 Blank

Lab Sample ID: 380-191524-2

Date Collected: 01/07/26 10:35

Matrix: Water

Date Received: 01/09/26 10:02

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		01/10/26 10:32	01/11/26 17:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/10/26 10:32	01/11/26 17:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C6 PFDA	98		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C5 PFHxA	94		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C4 PFHpA	94		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C8 PFOA	103		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C9 PFNA	98		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C7 PFUnA	100		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C2 PFDoA	95		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C4 PFBA	100		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C5 PFPeA	96		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C3 PFBS	102		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C3 PFHxS	100		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C8 PFOS	102		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C2-4:2-FTS	129		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C2-6:2-FTS	127		50 - 200	01/10/26 10:32	01/11/26 17:05	1
13C2-8:2-FTS	121		50 - 200	01/10/26 10:32	01/11/26 17:05	1

Client Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

Client Sample ID: HALAWA WELL P1 Blank

Lab Sample ID: 380-191524-2

Date Collected: 01/07/26 10:35

Matrix: Water

Date Received: 01/09/26 10:02

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		01/10/26 06:32	01/11/26 00:03	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/10/26 06:32	01/11/26 00:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			01/10/26 06:32	01/11/26 00:03	1
13C2 PFHxA	103		70 - 130			01/10/26 06:32	01/11/26 00:03	1
13C2 PFDA	103		70 - 130			01/10/26 06:32	01/11/26 00:03	1
13C3-GenX	97		70 - 130			01/10/26 06:32	01/11/26 00:03	1

Action Limit Summary

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

Client Sample ID: HALAWA WELL P1

Lab Sample ID: 380-191524-1

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)	2.6		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		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)	2.9		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)	3.1		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 WELL P1 Blank

Lab Sample ID: 380-191524-2

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

Surrogate Summary

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

Job ID: 380-191524-1
 SDG: PFAS: Halawa Well P1

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)
380-191524-1	HALAWA WELL P1	109	107	100	101
380-191524-2	HALAWA WELL P1 Blank	109	103	103	97
380-191591-B-1-A MS	Matrix Spike	108	105	99	101
380-191591-C-1-A MSD	Matrix Spike Duplicate	108	109	103	103
LCS 380-196921/23-A	Lab Control Sample	96	110	106	98
MBL 380-196921/21-A	Method Blank	103	105	103	96
MRL 380-196921/22-A	Lab Control Sample	108	118	106	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: 380-191524-1
SDG: PFAS: Halawa Well P1

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)
380-191524-1	HALAWA WELL P1	83	92	88	92	95	92	91	93
380-191524-2	HALAWA WELL P1 Blank	82	98	94	94	103	98	100	95
380-191596-B-1-A MS	Matrix Spike	94	103	99	98	104	100	103	97
380-191596-C-1-A MSD	Matrix Spike Duplicate	95	99	98	101	102	99	99	99
LCS 380-196928/22-A	Lab Control Sample	95	103	100	100	103	101	103	101
MBL 380-196928/20-A	Method Blank	84	97	95	98	99	102	100	97
MRL 380-196928/21-A	Lab Control Sample	85	101	98	99	103	99	101	96

		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)
380-191524-1	HALAWA WELL P1	97	90	106	105	101	133	123	125
380-191524-2	HALAWA WELL P1 Blank	100	96	102	100	102	129	127	121
380-191596-B-1-A MS	Matrix Spike	99	97	102	102	100	127	124	114
380-191596-C-1-A MSD	Matrix Spike Duplicate	101	104	107	102	102	130	121	117
LCS 380-196928/22-A	Lab Control Sample	102	103	104	101	100	114	113	111
MBL 380-196928/20-A	Method Blank	98	95	100	98	99	114	112	113
MRL 380-196928/21-A	Lab Control Sample	100	98	104	103	100	118	117	122

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: 380-191524-1
SDG: PFAS: Halawa Well P1

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

Lab Sample ID: MBL 380-196928/20-A
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 196928

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		01/10/26 10:32	01/11/26 14:52	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		01/10/26 10:32	01/11/26 14:52	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	84		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C6 PFDA	97		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C5 PFHxA	95		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C4 PFHpA	98		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C8 PFOA	99		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C9 PFNA	102		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C7 PFUnA	100		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C2 PFDoA	97		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C4 PFBA	98		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C5 PFPeA	95		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C3 PFBS	100		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C3 PFHxS	98		50 - 200	01/10/26 10:32	01/11/26 14:52	1

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QC Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

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

Lab Sample ID: MBL 380-196928/20-A
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 196928

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	99		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C2-4:2-FTS	114		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C2-6:2-FTS	112		50 - 200	01/10/26 10:32	01/11/26 14:52	1
13C2-8:2-FTS	113		50 - 200	01/10/26 10:32	01/11/26 14:52	1

Lab Sample ID: LCS 380-196928/22-A
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 196928

<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>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	102		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	108		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	116		ng/L		96	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	114		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	113		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	120	120		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	120	119		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	116		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	119		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	120	119		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	120	116		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	114		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	120	118		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	119		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	120	114		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	117		ng/L		97	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	102		ng/L		84	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	109		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	108		ng/L		89	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	113		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	120	114		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	116		ng/L		97	70 - 130

QC Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

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

Lab Sample ID: LCS 380-196928/22-A
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 196928

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Perfluoropentanesulfonic acid (PFPeS)	120	114		ng/L		94	70 - 130	
LCS LCS								
Isotope Dilution	%Recovery	Qualifier						Limits
13C3 HFPO-DA	95							50 - 200
13C6 PFDA	103							50 - 200
13C5 PFHxA	100							50 - 200
13C4 PFHpA	100							50 - 200
13C8 PFOA	103							50 - 200
13C9 PFNA	101							50 - 200
13C7 PFUnA	103							50 - 200
13C2 PFDoA	101							50 - 200
13C4 PFBA	102							50 - 200
13C5 PFPeA	103							50 - 200
13C3 PFBS	104							50 - 200
13C3 PFHxS	101							50 - 200
13C8 PFOS	100							50 - 200
13C2-4:2-FTS	114							50 - 200
13C2-6:2-FTS	113							50 - 200
13C2-8:2-FTS	111							50 - 200

Lab Sample ID: MRL 380-196928/21-A
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 196928

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.91	J	ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.93	J	ng/L		96	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.14	J	ng/L		107	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.14	J	ng/L		107	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.24	J	ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.12	J	ng/L		105	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.21	J	ng/L		110	50 - 150

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QC Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

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

Lab Sample ID: MRL 380-196928/21-A
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 196928

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.25	J	ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.12	J	ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.26	J	ng/L		112	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	1.67	J	ng/L		83	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.95	J	ng/L		97	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.10	J	ng/L		104	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.00	J	ng/L		100	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	85		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	101		50 - 200
13C2 PFDoA	96		50 - 200
13C4 PFBA	100		50 - 200
13C5 PFPeA	98		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	100		50 - 200
13C2-4:2-FTS	118		50 - 200
13C2-6:2-FTS	117		50 - 200
13C2-8:2-FTS	122		50 - 200

Lab Sample ID: 380-191596-B-1-A MS
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 196928

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	53.5		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	54.4		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	59.9		ng/L		99	70 - 130

QC Sample Results

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

Job ID: 380-191524-1
 SDG: PFAS: Halawa Well P1

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

Lab Sample ID: 380-191596-B-1-A MS
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 196928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.4	61.7		ng/L		102	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	62.0		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	59.3		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	60.4		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	60.3		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	60.6		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	63.0		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	60.7		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	61.5		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	58.3		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	57.7		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	61.6		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	63.3		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	61.5		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	58.2		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	50.6		ng/L		84	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	57.3		ng/L		95	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	56.7		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	59.7		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	61.4		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	57.8		ng/L		96	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	56.8		ng/L		94	70 - 130

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C3 HFPO-DA	94		50 - 200
13C6 PFDA	103		50 - 200
13C5 PFHxA	99		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	104		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	103		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	97		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	102		50 - 200
13C8 PFOS	100		50 - 200

QC Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

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

Lab Sample ID: 380-191596-B-1-A MS
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 196928

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	127		50 - 200
13C2-6:2-FTS	124		50 - 200
13C2-8:2-FTS	114		50 - 200

Lab Sample ID: 380-191596-C-1-A MSD
Matrix: Water
Analysis Batch: 196968

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 196928

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	53.2		ng/L		88	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	54.6		ng/L		91	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	57.5		ng/L		95	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	61.3		ng/L		102	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	60.7		ng/L		99	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	62.3		ng/L		103	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	59.2		ng/L		98	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	57.9		ng/L		95	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	60.4		ng/L		99	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	63.3		ng/L		104	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	60.1		ng/L		100	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	60.5		ng/L		97	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	61.6		ng/L		100	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	60.5		ng/L		100	70 - 130	5	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	60.9		ng/L		99	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	63.5		ng/L		105	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	56.4		ng/L		94	70 - 130	9	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	59.7		ng/L		99	70 - 130	3	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	49.7		ng/L		82	70 - 130	2	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	54.4		ng/L		90	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	55.9		ng/L		93	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	58.9		ng/L		98	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	61.2		ng/L		100	70 - 130	0	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	58.9		ng/L		98	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	56.8		ng/L		94	70 - 130	0	30

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QC Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	99		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	101		50 - 200
13C8 PFOA	102		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	99		50 - 200
13C2 PFDoA	99		50 - 200
13C4 PFBA	101		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	102		50 - 200
13C8 PFOS	102		50 - 200
13C2-4:2-FTS	130		50 - 200
13C2-6:2-FTS	121		50 - 200
13C2-8:2-FTS	117		50 - 200

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

Lab Sample ID: MBL 380-196921/21-A
Matrix: Water
Analysis Batch: 196951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 196921

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		01/10/26 06:32	01/10/26 21:13	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/10/26 06:32	01/10/26 21:13	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	103		70 - 130			01/10/26 06:32	01/10/26 21:13	1
13C2 PFHxA	105		70 - 130			01/10/26 06:32	01/10/26 21:13	1
13C2 PFDA	103		70 - 130			01/10/26 06:32	01/10/26 21:13	1

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QC Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

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

Lab Sample ID: MBL 380-196921/21-A
Matrix: Water
Analysis Batch: 196951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 196921

<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	96	Qualifier	70 - 130	01/10/26 06:32	01/10/26 21:13	1

Lab Sample ID: LCS 380-196921/23-A
Matrix: Water
Analysis Batch: 196951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 196921

<i>Analyte</i>	<i>Spike</i>	<i>LCS</i>	<i>LCS</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>	<i>Limits</i>
	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>					
Hexafluoropropylene Oxide	25.1	23.3		ng/L		93		70 - 130
Dimer Acid (HFPO-DA/GenX)								
Perfluorooctanesulfonic acid (PFOS)	25.1	26.6		ng/L		106		70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	24.3		ng/L		97		70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	23.7		ng/L		95		70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	23.4		ng/L		94		70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	26.0		ng/L		104		70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	24.2		ng/L		97		70 - 130
Perfluorooctanoic acid (PFOA)	25.1	25.9		ng/L		103		70 - 130
Perfluorodecanoic acid (PFDA)	25.1	25.7		ng/L		103		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	27.1		ng/L		108		70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	28.0		ng/L		112		70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	25.2		ng/L		100		70 - 130
Perfluorononanoic acid (PFNA)	25.1	25.9		ng/L		103		70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	21.9		ng/L		88		70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	25.0		ng/L		100		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	25.5		ng/L		102		70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	25.7		ng/L		103		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	23.0		ng/L		92		70 - 130

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
d5-NEtFOSAA	96		70 - 130
13C2 PFHxA	110		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	98		70 - 130

QC Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

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

Lab Sample ID: MRL 380-196921/22-A
Matrix: Water
Analysis Batch: 196951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 196921

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.96	J	ng/L		98	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.15	J	ng/L		107	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.02	J	ng/L		100	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	1.99	J	ng/L		99	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.18	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.24	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.12	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.32	J	ng/L		116	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.23	J	ng/L		111	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	1.54	J	ng/L		77	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.01	2.04	J	ng/L		101	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.06	J	ng/L		103	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.00	J	ng/L		100	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.03	J	ng/L		101	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	108		70 - 130
13C2 PFHxA	118		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	109		70 - 130

Lab Sample ID: 380-191591-B-1-A MS
Matrix: Water
Analysis Batch: 196951

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 196921

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.1	47.3		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	5.4		50.1	58.3		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	46.9		ng/L		94	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	50.9		ng/L		102	70 - 130

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QC Sample Results

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

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

Lab Sample ID: 380-191591-B-1-A MS
Matrix: Water
Analysis Batch: 196951

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 196921

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	52.2		ng/L		104	70 - 130	
Perfluorohexanoic acid (PFHxA)	3.9		50.1	52.1		ng/L		96	70 - 130	
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	47.4		ng/L		95	70 - 130	
Perfluorooctanoic acid (PFOA)	4.4		50.1	56.4		ng/L		104	70 - 130	
Perfluorodecanoic acid (PFDA)	<2.0		50.1	48.3		ng/L		96	70 - 130	
Perfluorohexanesulfonic acid (PFHxS)	4.2		50.1	57.3		ng/L		106	70 - 130	
Perfluorobutanesulfonic acid (PFBS)	3.6		50.1	58.6		ng/L		110	70 - 130	
Perfluoroheptanoic acid (PFHpA)	2.0		50.1	50.8		ng/L		97	70 - 130	
Perfluorononanoic acid (PFNA)	<2.0		50.1	50.2		ng/L		100	70 - 130	
Perfluorotetradecanoic acid (PFTA)	<2.0	F1	50.1	34.5	F1	ng/L		69	70 - 130	
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.1	50.3		ng/L		100	70 - 130	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.1	51.3		ng/L		102	70 - 130	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.1	52.1		ng/L		104	70 - 130	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.1	47.7		ng/L		95	70 - 130	
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
d5-NEtFOSAA	108		70 - 130							
13C2 PFHxA	105		70 - 130							
13C2 PFDA	99		70 - 130							
13C3-GenX	101		70 - 130							

Lab Sample ID: 380-191591-C-1-A MSD
Matrix: Water
Analysis Batch: 196951

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 196921

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	48.5		ng/L		97	70 - 130	2	30	
Perfluorooctanesulfonic acid (PFOS)	5.4		50.2	59.7		ng/L		108	70 - 130	2	30	
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	48.1		ng/L		96	70 - 130	2	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	52.2		ng/L		104	70 - 130	2	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	52.0		ng/L		103	70 - 130	1	30	
Perfluorohexanoic acid (PFHxA)	3.9		50.2	55.4		ng/L		103	70 - 130	6	30	
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	48.8		ng/L		97	70 - 130	3	30	
Perfluorooctanoic acid (PFOA)	4.4		50.2	55.4		ng/L		102	70 - 130	2	30	
Perfluorodecanoic acid (PFDA)	<2.0		50.2	48.5		ng/L		97	70 - 130	0	30	

Eurofins Pomona

QC Association Summary

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

LCMS

Prep Batch: 196921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-191524-1	HALAWA WELL P1	Total/NA	Water	537.1 DW	
380-191524-2	HALAWA WELL P1 Blank	Total/NA	Water	537.1 DW	
MBL 380-196921/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-196921/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-196921/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-191591-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-191591-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 196928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-191524-1	HALAWA WELL P1	Total/NA	Water	533	
380-191524-2	HALAWA WELL P1 Blank	Total/NA	Water	533	
MBL 380-196928/20-A	Method Blank	Total/NA	Water	533	
LCS 380-196928/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-196928/21-A	Lab Control Sample	Total/NA	Water	533	
380-191596-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-191596-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 196951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-191524-1	HALAWA WELL P1	Total/NA	Water	537.1	196921
380-191524-2	HALAWA WELL P1 Blank	Total/NA	Water	537.1	196921
MBL 380-196921/21-A	Method Blank	Total/NA	Water	537.1	196921
LCS 380-196921/23-A	Lab Control Sample	Total/NA	Water	537.1	196921
MRL 380-196921/22-A	Lab Control Sample	Total/NA	Water	537.1	196921
380-191591-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	196921
380-191591-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	196921

Analysis Batch: 196968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-191524-1	HALAWA WELL P1	Total/NA	Water	533	196928
380-191524-2	HALAWA WELL P1 Blank	Total/NA	Water	533	196928
MBL 380-196928/20-A	Method Blank	Total/NA	Water	533	196928
LCS 380-196928/22-A	Lab Control Sample	Total/NA	Water	533	196928
MRL 380-196928/21-A	Lab Control Sample	Total/NA	Water	533	196928
380-191596-B-1-A MS	Matrix Spike	Total/NA	Water	533	196928
380-191596-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	196928

Lab Chronicle

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

Job ID: 380-191524-1
SDG: PFAS: Halawa Well P1

Client Sample ID: HALAWA WELL P1

Lab Sample ID: 380-191524-1

Date Collected: 01/07/26 10:35

Matrix: Water

Date Received: 01/09/26 10:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			196928	N8NE	EA POM	01/10/26 10:32
Total/NA	Analysis	533		1	196968	SZ9R	EA POM	01/11/26 16:55
Total/NA	Prep	537.1 DW			196921	E9PK	EA POM	01/10/26 06:32
Total/NA	Analysis	537.1		1	196951	M7ML	EA POM	01/10/26 23:54

Client Sample ID: HALAWA WELL P1 Blank

Lab Sample ID: 380-191524-2

Date Collected: 01/07/26 10:35

Matrix: Water

Date Received: 01/09/26 10:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			196928	N8NE	EA POM	01/10/26 10:32
Total/NA	Analysis	533		1	196968	SZ9R	EA POM	01/11/26 17:05
Total/NA	Prep	537.1 DW			196921	E9PK	EA POM	01/10/26 06:32
Total/NA	Analysis	537.1		1	196951	M7ML	EA POM	01/11/26 00:03

Laboratory References:

EA POM = Eurofins 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: 380-191524-1
SDG: PFAS: Halawa Well P1

Laboratory: Eurofins Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-26

- 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: 380-191524-1
SDG: PFAS: Halawa Well P1

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 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: 380-191524-1
SDG: PFAS: Halawa Well P1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-191524-1	HALAWA WELL P1	Water	01/07/26 10:35	01/09/26 10:02	Hawaii
380-191524-2	HALAWA WELL P1 Blank	Water	01/07/26 10:35	01/09/26 10:02	Hawaii

- 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



Environment
America



380-191524 COC

Client Information
 Client Contact: **Jason Rakofsky**
 Phone: **+1 808 748 5840**
 City & County of Honolulu
 Address: **630 South Beretania Street, Chemistry Lab**
 City: **Honolulu**
 State, Zip: **HI, 96843**
 Phone: **808-748-5840 (tel)**
 Email: **kwamato@hbws.org**
 Project Name: **RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill**
 Site: **Site:**

Lab Pkt: Arada, Rachelle
E-Mail: Rachelle.Arada@et.eurofins.com
Carrier Tracking No(s): 380-27941-2757.2
Page: Page 2 of 2
Job #:

Due Date Requested:
 TAT Requested (days): **RUSH**
 Compliance Project: No Yes
 PO #: **C20525101 exp 05312023**
 WO #:
 Project #: **38001111**
 SSOW#:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Seawater, Other)	Field Filled Sample (Yes or No)	Perform Method (Yes or No)	Subcontract - 625 PAH Phys LL (EAL) + TICs	6016B_GRO_LL - (MOD) GRO	6016B_DRO_LL_CS - HNL Range: C10-C24/C24-C36/C8-C18	625.2_PREC - (MOD) 826plus PLUS TICs	637.1_DW_PREC - 637.1 Full List	633 - All Analytes	Analysis Requested	Preservation Codes:	Special Instructions/Note:
Halawa Well P1	7-Jan-2026	1035	G	Water	X	X					3	3		A-HCl B-NaOH C-Zn Acetate D-Nitric Acid E-NaHSO4 F-MeOH G-Arniclor H-Ascorbic Acid I-Ice J-DI Water K-EDTA L-EDA Other:	
Halawa Well P1 Blank	7-Jan-2026	✓	G	Water	X	X					1	1			

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
 Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements:

Empty Kit Relinquished by: [Redacted] Date: [Redacted]
Relinquished by: [Redacted] Date/Time: 1/8/26 1100 Company: HBWS
Relinquished by: [Redacted] Date/Time: 1/4/26 1602 Company: [Redacted]
Relinquished by: [Redacted] Date/Time: [Redacted] Company: [Redacted]

Custody Seal No.: Yes No
 Cooler Temperature(s) °C and Other Remarks: (3/1) 2.0+0.0 2.8 gel-frozen

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

Chain of Custody Record



Environment
America



380-191524 COC

Client Information
 Sampler: Jason Rakofsky
 Lab Pkt: Arada, Rachelle
 Carrier Tracking No(s): 380-27941-2757.2
 Client Contact: kirk iwamoto
 Phone: +1 808 748 5840
 E-Mail: Rachelle.Arada@et.eurofins.com
 Page: Page 2 of 2
 Job #:

Company: City & County of Honolulu
 Address: 630 South Beretania Street, Chemistry Lab
 City: Honolulu
 State, Zip: HI, 96843
 Phone: 808-748-5840 (tel)
 Email: kiwamoto@hbws.org
 Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill
 Site:
 Project #: 38001111
 SSOW#:
 Due Date Requested:
 TAT Requested (days): RUSH
 Compliance Project: No Yes
 PO #: C20525101 exp 05312023
 WO #:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Seawater, Stormwater, Other)	Field Filled Sample (Yes or No)	Perform Method (Yes or No)	Subcontract - 625 PAH Phys LL (EAL) + TICs	6016B_GRO_LL - (MOD) GRO	6016B_DRO_LL_CS - HNL Range: C10-C24/C24-C36/C8-C18	625.2_PREC - (MOD) 826plus PLUS TICs	637.1_DW_PREC - 637.1 Full List	635 - All Analytes	Analysis Requested	Preservation Codes:	Special Instructions/Note:
Halawa Well P1	7-Jan-2026	1035	G	Water	X	X					3	3		A-HCl B-NaOH C-Zn Acetate D-Nitric Acid E-NaHSO4 F-MeOH G-Arniclor H-Ascorbic Acid I-Ice J-DI Water K-EDTA L-EDA Other:	
Halawa Well P1 Blank	7-Jan-2026	✓	G	Water	X	X					1	1			

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
 Deliverable Requested: I, II, III, IV, Other (specify)

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by: _____ Date: _____
 Rel: _____ Date/Time: 1/8/26 1100 Company: HBWS
 Rel: _____ Date/Time: _____ Company: _____
 Relinquished by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: Yes No
 Cooler Temperature(s) °C and Other Remarks: (3/1) 2.0+0.0 2.8 gel-frozen

Method of Shipment: FedEx # 123456789
 Date/Time: 1/4/26 1602 Company: KLF
 Date/Time: _____ Company: _____
 Date/Time: _____ Company: _____



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-191524-1
SDG Number: PFAS: Halawa Well P1

Login Number: 191524

List Number: 1

Creator: Del Rosario, Michael

List Source: Eurofins 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	