

# ANALYTICAL REPORT

## PREPARED FOR

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## JOB DESCRIPTION

RED-HILL

## JOB NUMBER

380-103363-1

# Eurofins Eaton Analytical Pomona

## Job Notes

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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: 380-103363-1

## Qualifiers

### LCMS

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

## Glossary

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

# Case Narrative

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

Job ID: 380-103363-1

**Job ID: 380-103363-1**

**Eurofins Eaton Analytical Pomona**

## Job Narrative 380-103363-1

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 7/10/2024 9:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C.

### PFAS

Methods 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 WELLS UNITS 1&2 P1 (380-103363-4).

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: 380-103363-1

## Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-103363-1

No Detections.

## Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-103363-2

No Detections.

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

Lab Sample ID: 380-103363-3

No Detections.

## Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-103363-4

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)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.7		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
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		537.1	Total/NA

## Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-103363-5

No Detections.

## Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-103363-6

No Detections.

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

Lab Sample ID: 380-103363-7

No Detections.

## Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-103363-8

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: 380-103363-1

**Client Sample ID: MOANALUA WELLS**

**Lab Sample ID: 380-103363-1**

Date Collected: 07/08/24 10:12

Matrix: Water

Date Received: 07/10/24 09:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C6 PFDA	104		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C5 PFHxA	103		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C4 PFHpA	111		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C8 PFOA	106		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C9 PFNA	104		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C7 PFUnA	105		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C2 PFDoA	100		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C4 PFBA	106		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C5 PFPeA	112		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C3 PFBS	114		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C3 PFHxS	120		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C8 PFOS	109		50 - 200	07/11/24 16:20	07/12/24 20:23	1

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# Client Sample Results

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

Job ID: 380-103363-1

**Client Sample ID: MOANALUA WELLS**

**Lab Sample ID: 380-103363-1**

Date Collected: 07/08/24 10:12

Matrix: Water

Date Received: 07/10/24 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	151		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C2-6:2-FTS	139		50 - 200	07/11/24 16:20	07/12/24 20:23	1
13C2-8:2-FTS	118		50 - 200	07/11/24 16:20	07/12/24 20:23	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		07/11/24 12:30	07/12/24 13:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:22	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	101		70 - 130	07/11/24 12:30	07/12/24 13:22	1		
13C2 PFHxA	102		70 - 130	07/11/24 12:30	07/12/24 13:22	1		
13C2 PFDA	96		70 - 130	07/11/24 12:30	07/12/24 13:22	1		
13C3-GenX	87		70 - 130	07/11/24 12:30	07/12/24 13:22	1		

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-103363-2**

Date Collected: 07/08/24 11:03

Matrix: Water

Date Received: 07/10/24 09:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1

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# Client Sample Results

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

Job ID: 380-103363-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-103363-2**

Date Collected: 07/08/24 11:03

Matrix: Water

Date Received: 07/10/24 09:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:32	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C6 PFDA	106		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C5 PFHxA	101		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C4 PFHpA	104		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C8 PFOA	105		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C9 PFNA	106		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C7 PFUnA	105		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C2 PFDoA	100		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C4 PFBA	96		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C5 PFPeA	103		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C3 PFBS	117		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C3 PFHxS	117		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C8 PFOS	111		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C2-4:2-FTS	142		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C2-6:2-FTS	131		50 - 200	07/11/24 16:20	07/12/24 20:32	1
13C2-8:2-FTS	121		50 - 200	07/11/24 16:20	07/12/24 20:32	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		07/11/24 12:30	07/12/24 13:32	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-103363-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-103363-2**

Date Collected: 07/08/24 11:03

Matrix: Water

Date Received: 07/10/24 09:55

**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		07/11/24 12:30	07/12/24 13:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:32	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
d5-NEtFOSAA	98		70 - 130			07/11/24 12:30	07/12/24 13:32	1
13C2 PFHxA	101		70 - 130			07/11/24 12:30	07/12/24 13:32	1
13C2 PFDA	96		70 - 130			07/11/24 12:30	07/12/24 13:32	1
13C3-GenX	94		70 - 130			07/11/24 12:30	07/12/24 13:32	1

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

**Lab Sample ID: 380-103363-3**

Date Collected: 07/08/24 11:30

Matrix: Water

Date Received: 07/10/24 09:55

**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		07/11/24 16:20	07/12/24 20:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: 380-103363-3**

Date Collected: 07/08/24 11:30

Matrix: Water

Date Received: 07/10/24 09:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C6 PFDA	104		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C5 PFHxA	102		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C4 PFHpA	107		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C8 PFOA	109		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C9 PFNA	108		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C7 PFUnA	109		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C2 PFDoA	104		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C4 PFBA	99		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C5 PFPeA	106		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C3 PFBS	119		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C3 PFHxS	120		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C8 PFOS	109		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C2-4:2-FTS	153		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C2-6:2-FTS	138		50 - 200	07/11/24 16:20	07/12/24 20:42	1
13C2-8:2-FTS	113		50 - 200	07/11/24 16:20	07/12/24 20:42	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		07/11/24 12:30	07/12/24 13:41	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1

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# Client Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: 380-103363-3**

**Date Collected: 07/08/24 11:30**

**Matrix: Water**

**Date Received: 07/10/24 09:55**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130			07/11/24 12:30	07/12/24 13:41	1
13C2 PFHxA	110		70 - 130			07/11/24 12:30	07/12/24 13:41	1
13C2 PFDA	106		70 - 130			07/11/24 12:30	07/12/24 13:41	1
13C3-GenX	104		70 - 130			07/11/24 12:30	07/12/24 13:41	1

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-103363-4**

**Date Collected: 07/08/24 10:39**

**Matrix: Water**

**Date Received: 07/10/24 09:55**

**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		07/12/24 07:57	07/12/24 23:49	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.3</b>		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>2.2</b>		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.4</b>		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-103363-1

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-103363-4**

Date Collected: 07/08/24 10:39

Matrix: Water

Date Received: 07/10/24 09:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
<b>Perfluoropentanoic acid (PFPeA)</b>	<b>2.7</b>		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/12/24 07:57	07/12/24 23:49	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	83		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C6 PFDA	93		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C5 PFHxA	93		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C4 PFHpA	91		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C8 PFOA	91		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C9 PFNA	90		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C7 PFUnA	96		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C2 PFDoA	102		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C4 PFBA	101		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C5 PFPeA	106		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C3 PFBS	97		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C3 PFHxS	110		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C8 PFOS	109		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C2-4:2-FTS	133		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C2-6:2-FTS	121		50 - 200			07/12/24 07:57	07/12/24 23:49	1
13C2-8:2-FTS	116		50 - 200			07/12/24 07:57	07/12/24 23:49	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		07/11/24 12:30	07/12/24 13:51	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.3</b>		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>2.4</b>		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.0</b>		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.6</b>		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-103363-1

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-103363-4**

Date Collected: 07/08/24 10:39

Matrix: Water

Date Received: 07/10/24 09:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 13:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130			07/11/24 12:30	07/12/24 13:51	1
13C2 PFHxA	106		70 - 130			07/11/24 12:30	07/12/24 13:51	1
13C2 PFDA	102		70 - 130			07/11/24 12:30	07/12/24 13:51	1
13C3-GenX	99		70 - 130			07/11/24 12:30	07/12/24 13:51	1

**Client Sample ID: FB: MOANALUA WELLS**

**Lab Sample ID: 380-103363-5**

Date Collected: 07/08/24 10:12

Matrix: Water

Date Received: 07/10/24 09:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1

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# Client Sample Results

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

Job ID: 380-103363-1

**Client Sample ID: FB: MOANALUA WELLS**

**Lab Sample ID: 380-103363-5**

Date Collected: 07/08/24 10:12

Matrix: Water

Date Received: 07/10/24 09:55

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 20:51	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	107		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C6 PFDA	113		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C5 PFHxA	119		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C4 PFHpA	123		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C8 PFOA	122		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C9 PFNA	115		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C7 PFUnA	114		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C2 PFDoA	109		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C4 PFBA	113		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C5 PFPeA	121		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C3 PFBS	120		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C3 PFHxS	120		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C8 PFOS	110		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C2-4:2-FTS	148		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C2-6:2-FTS	135		50 - 200			07/11/24 16:20	07/12/24 20:51	1
13C2-8:2-FTS	114		50 - 200			07/11/24 16:20	07/12/24 20:51	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		07/11/24 12:30	07/12/24 14:00	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	103		70 - 130			07/11/24 12:30	07/12/24 14:00	1
13C2 PFHxA	101		70 - 130			07/11/24 12:30	07/12/24 14:00	1

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# Client Sample Results

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

Job ID: 380-103363-1

## Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-103363-5

Date Collected: 07/08/24 10:12

Matrix: Water

Date Received: 07/10/24 09:55

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C2 PFDA	100		70 - 130	07/11/24 12:30	07/12/24 14:00	1
<sup>13</sup> C3-GenX	93		70 - 130	07/11/24 12:30	07/12/24 14:00	1

## Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-103363-6

Date Collected: 07/08/24 11:03

Matrix: Water

Date Received: 07/10/24 09:55

### 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		07/11/24 16:20	07/12/24 21:01	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:01	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
<sup>13</sup> C3 HFPO-DA	99		50 - 200	07/11/24 16:20	07/12/24 21:01	1		
<sup>13</sup> C6 PFDA	110		50 - 200	07/11/24 16:20	07/12/24 21:01	1		
<sup>13</sup> C5 PFHxA	114		50 - 200	07/11/24 16:20	07/12/24 21:01	1		
<sup>13</sup> C4 PFHpA	122		50 - 200	07/11/24 16:20	07/12/24 21:01	1		

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# Client Sample Results

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

Job ID: 380-103363-1

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-103363-6**

Date Collected: 07/08/24 11:03

Matrix: Water

Date Received: 07/10/24 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	116		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C9 PFNA	112		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C7 PFUnA	107		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C2 PFDoA	105		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C4 PFBA	115		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C5 PFPeA	121		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C3 PFBS	120		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C3 PFHxS	119		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C8 PFOS	109		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C2-4:2-FTS	152		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C2-6:2-FTS	141		50 - 200	07/11/24 16:20	07/12/24 21:01	1
13C2-8:2-FTS	118		50 - 200	07/11/24 16:20	07/12/24 21:01	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	105		70 - 130	07/11/24 12:30	07/12/24 14:10	1
13C2 PFHxA	104		70 - 130	07/11/24 12:30	07/12/24 14:10	1
13C2 PFDA	104		70 - 130	07/11/24 12:30	07/12/24 14:10	1
13C3-GenX	94		70 - 130	07/11/24 12:30	07/12/24 14:10	1

# Client Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: 380-103363-7**

**Date Collected: 07/08/24 11:30**

**Matrix: Water**

**Date Received: 07/10/24 09:55**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/11/24 16:20	07/12/24 21:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	104		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C6 PFDA	106		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C5 PFHxA	109		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C4 PFHpA	118		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C8 PFOA	116		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C9 PFNA	111		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C7 PFUnA	110		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C2 PFDoA	99		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C4 PFBA	115		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C5 PFPeA	122		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C3 PFBS	113		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C3 PFHxS	118		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C8 PFOS	110		50 - 200	07/11/24 16:20	07/12/24 21:11	1

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# Client Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: 380-103363-7**

**Date Collected: 07/08/24 11:30**

**Matrix: Water**

**Date Received: 07/10/24 09:55**

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2-4:2-FTS	136		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C2-6:2-FTS	134		50 - 200	07/11/24 16:20	07/12/24 21:11	1
13C2-8:2-FTS	113		50 - 200	07/11/24 16:20	07/12/24 21:11	1

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:20	1

  

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
d5-NEtFOSAA	110		70 - 130	07/11/24 12:30	07/12/24 14:20	1
13C2 PFHxA	116		70 - 130	07/11/24 12:30	07/12/24 14:20	1
13C2 PFDA	109		70 - 130	07/11/24 12:30	07/12/24 14:20	1
13C3-GenX	101		70 - 130	07/11/24 12:30	07/12/24 14:20	1

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-103363-8**

**Date Collected: 07/08/24 10:39**

**Matrix: Water**

**Date Received: 07/10/24 09:55**

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1

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# Client Sample Results

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

Job ID: 380-103363-1

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-103363-8**

**Date Collected: 07/08/24 10:39**

**Matrix: Water**

**Date Received: 07/10/24 09:55**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/12/24 07:57	07/13/24 00:00	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C6 PFDA	114		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C5 PFHxA	105		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C4 PFHpA	110		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C8 PFOA	110		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C9 PFNA	108		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C7 PFUnA	112		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C2 PFDoA	115		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C4 PFBA	113		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C5 PFPeA	121		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C3 PFBS	100		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C3 PFHxS	112		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C8 PFOS	111		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C2-4:2-FTS	121		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C2-6:2-FTS	127		50 - 200	07/12/24 07:57	07/13/24 00:00	1
13C2-8:2-FTS	123		50 - 200	07/12/24 07:57	07/13/24 00:00	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1

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# Client Sample Results

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

Job ID: 380-103363-1

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-103363-8**

**Date Collected: 07/08/24 10:39**

**Matrix: Water**

**Date Received: 07/10/24 09:55**

**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		07/11/24 12:30	07/12/24 14:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/11/24 12:30	07/12/24 14:39	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
d5-NEtFOSAA	104		70 - 130			07/11/24 12:30	07/12/24 14:39	1
13C2 PFHxA	107		70 - 130			07/11/24 12:30	07/12/24 14:39	1
13C2 PFDA	106		70 - 130			07/11/24 12:30	07/12/24 14:39	1
13C3-GenX	97		70 - 130			07/11/24 12:30	07/12/24 14:39	1

# Action Limit Summary

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

Job ID: 380-103363-1

## Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-103363-1

### 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: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-103363-2

### Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

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

Lab Sample ID: 380-103363-3

### Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA

Eurofins Eaton Analytical Pomona

# Action Limit Summary

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

Job ID: 380-103363-1

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

Lab Sample ID: 380-103363-3

### Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

## Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-103363-4

### 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)	2.3		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		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: MOANALUA WELLS

Lab Sample ID: 380-103363-5

### Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

# Action Limit Summary

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

Job ID: 380-103363-1

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-103363-6**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

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

**Lab Sample ID: 380-103363-7**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
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 P1**

**Lab Sample ID: 380-103363-8**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA

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# Action Limit Summary

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

Job ID: 380-103363-1

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1  
(Continued)**

**Lab Sample ID: 380-103363-8**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
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: 380-103363-1

## 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)
380-102899-B-1-A MS	Matrix Spike	97	92	102	83
380-102899-C-1-A MSD	Matrix Spike Duplicate	96	89	102	84
380-103363-1	MOANALUA WELLS	101	102	96	87
380-103363-2	AIEA GULCH WELLS PUMP 2	98	101	96	94
380-103363-3	AIEA WELLS PUMPS 1&2 (260) P2	106	110	106	104
380-103363-4	HALAWA WELLS UNITS 1&2 P1	107	106	102	99
380-103363-5	FB: MOANALUA WELLS	103	101	100	93
380-103363-6	FB: AIEA GULCH WELLS PUMF 2	105	104	104	94
380-103363-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	110	116	109	101
380-103363-8	FB: HALAWA WELLS UNITS 1&2 P1	104	107	106	97
LCS 380-98587/22-A	Lab Control Sample	96	100	96	90
MBL 380-98587/20-A	Method Blank	106	102	105	100
MRL 380-98587/21-A	Lab Control Sample	99	102	100	90

### 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: 380-103363-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-103363-1	MOANALUA WELLS	96	104	103	111	106	104	105	100
380-103363-2	AIEA GULCH WELLS PUMP 2	89	106	101	104	105	106	105	100
380-103363-3	AIEA WELLS PUMPS 1&2 (260) P2	92	104	102	107	109	108	109	104
380-103363-4	HALAWA WELLS UNITS 1&2 P1	83	93	93	91	91	90	96	102
380-103363-5	FB: MOANALUA WELLS	107	113	119	123	122	115	114	109
380-103363-6	FB: AIEA GULCH WELLS PUMF 2	99	110	114	122	116	112	107	105
380-103363-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	104	106	109	118	116	111	110	99
380-103363-8	FB: HALAWA WELLS UNITS 1&2 P1	95	114	105	110	110	108	112	115
380-103491-B-1-A MS	Matrix Spike	79	93	90	90	92	88	89	93
380-103491-C-1-A MSD	Matrix Spike Duplicate	89	92	93	95	95	90	95	93
LCS 380-98598/22-A	Lab Control Sample	109	109	114	118	117	112	111	111
LCS 380-98721/24-A	Lab Control Sample	91	107	98	102	106	101	109	105
MBL 380-98598/20-A	Method Blank	104	111	118	120	116	111	107	105
MBL 380-98721/22-A	Method Blank	85	102	96	100	101	99	103	106
MRL 380-98598/21-A	Lab Control Sample	103	105	111	120	115	109	105	106
MRL 380-98721/23-A	Lab Control Sample	84	101	98	100	102	97	104	105

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-103363-1	MOANALUA WELLS	106	112	114	120	109	151	139	118
380-103363-2	AIEA GULCH WELLS PUMP 2	96	103	117	117	111	142	131	121
380-103363-3	AIEA WELLS PUMPS 1&2 (260) P2	99	106	119	120	109	153	138	113
380-103363-4	HALAWA WELLS UNITS 1&2 P1	101	106	97	110	109	133	121	116
380-103363-5	FB: MOANALUA WELLS	113	121	120	120	110	148	135	114
380-103363-6	FB: AIEA GULCH WELLS PUMF 2	115	121	120	119	109	152	141	118
380-103363-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	115	122	113	118	110	136	134	113
380-103363-8	FB: HALAWA WELLS UNITS 1&2 P1	113	121	100	112	111	121	127	123
380-103491-B-1-A MS	Matrix Spike	95	108	94	103	105	118	118	109
380-103491-C-1-A MSD	Matrix Spike Duplicate	106	118	98	109	109	126	126	119
LCS 380-98598/22-A	Lab Control Sample	115	122	118	121	106	131	125	116
LCS 380-98721/24-A	Lab Control Sample	104	113	95	105	105	109	111	109
MBL 380-98598/20-A	Method Blank	110	122	121	123	105	139	129	113
MBL 380-98721/22-A	Method Blank	99	106	98	109	108	116	113	105
MRL 380-98598/21-A	Lab Control Sample	114	114	117	122	109	145	135	111
MRL 380-98721/23-A	Lab Control Sample	103	108	95	107	103	112	112	105

### Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA

# Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

Job ID: 380-103363-1

- 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

- 1
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- 3
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- 5
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- 16
- 17

# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: MBL 380-98598/20-A**  
**Matrix: Water**  
**Analysis Batch: 98781**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 98598**

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		07/11/24 16:20	07/12/24 17:21	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		07/11/24 16:20	07/12/24 17:21	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	104		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C6 PFDA	111		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C5 PFHxA	118		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C4 PFHpA	120		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C8 PFOA	116		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C9 PFNA	111		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C7 PFUnA	107		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C2 PFDoA	105		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C4 PFBA	110		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C5 PFPeA	122		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C3 PFBS	121		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C3 PFHxS	123		50 - 200	07/11/24 16:20	07/12/24 17:21	1

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: MBL 380-98598/20-A**  
**Matrix: Water**  
**Analysis Batch: 98781**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 98598**

<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	105		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C2-4:2-FTS	139		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C2-6:2-FTS	129		50 - 200	07/11/24 16:20	07/12/24 17:21	1
13C2-8:2-FTS	113		50 - 200	07/11/24 16:20	07/12/24 17:21	1

**Lab Sample ID: LCS 380-98598/22-A**  
**Matrix: Water**  
**Analysis Batch: 98781**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98598**

<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-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.0	61.2		ng/L		102	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.0	60.4		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.0	57.3		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.0	56.7		ng/L		94	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.0	60.6		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	60.0	57.3		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	60.0	56.9		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.0	58.9		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.0	59.0		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	60.0	57.0		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	60.0	57.3		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.0	61.4		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	60.0	55.4		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.0	58.1		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	60.0	57.5		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.0	61.7		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.0	62.5		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.0	62.8		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.0	56.1		ng/L		94	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.0	56.6		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.0	60.0		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.0	53.4		ng/L		89	70 - 130
Perfluoropentanoic acid (PFPeA)	60.0	56.0		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.0	64.5		ng/L		108	70 - 130

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# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: LCS 380-98598/22-A**  
**Matrix: Water**  
**Analysis Batch: 98781**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98598**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.0	56.2		ng/L		94	70 - 130
<b>LCS LCS</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
13C3 HFPO-DA	109		50 - 200				
13C6 PFDA	109		50 - 200				
13C5 PFHxA	114		50 - 200				
13C4 PFHpA	118		50 - 200				
13C8 PFOA	117		50 - 200				
13C9 PFNA	112		50 - 200				
13C7 PFUnA	111		50 - 200				
13C2 PFDoA	111		50 - 200				
13C4 PFBA	115		50 - 200				
13C5 PFPeA	122		50 - 200				
13C3 PFBS	118		50 - 200				
13C3 PFHxS	121		50 - 200				
13C8 PFOS	106		50 - 200				
13C2-4:2-FTS	131		50 - 200				
13C2-6:2-FTS	125		50 - 200				
13C2-8:2-FTS	116		50 - 200				

**Lab Sample ID: MRL 380-98598/21-A**  
**Matrix: Water**  
**Analysis Batch: 98781**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98598**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.05	J	ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.13	J	ng/L		106	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.03	J	ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.15	J	ng/L		107	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.10	J	ng/L		105	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: MRL 380-98598/21-A**  
**Matrix: Water**  
**Analysis Batch: 98781**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98598**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.35	J	ng/L		117	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.34	J	ng/L		117	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.37	J	ng/L		118	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.13	J	ng/L		106	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.27	J	ng/L		113	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.27	J	ng/L		113	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.12	J	ng/L		106	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	103		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	111		50 - 200
13C4 PFHpA	120		50 - 200
13C8 PFOA	115		50 - 200
13C9 PFNA	109		50 - 200
13C7 PFUnA	105		50 - 200
13C2 PFDoA	106		50 - 200
13C4 PFBA	114		50 - 200
13C5 PFPeA	114		50 - 200
13C3 PFBS	117		50 - 200
13C3 PFHxS	122		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	145		50 - 200
13C2-6:2-FTS	135		50 - 200
13C2-8:2-FTS	111		50 - 200

**Lab Sample ID: MBL 380-98721/22-A**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1

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# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: MBL 380-98721/22-A**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		07/12/24 07:57	07/12/24 21:51	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C6 PFDA	102		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C5 PFHxA	96		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C4 PFHpA	100		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C8 PFOA	101		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C9 PFNA	99		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C7 PFUnA	103		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C2 PFDoA	106		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C4 PFBA	99		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C5 PFPeA	106		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C3 PFBS	98		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C3 PFHxS	109		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C8 PFOS	108		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C2-4:2-FTS	116		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C2-6:2-FTS	113		50 - 200	07/12/24 07:57	07/12/24 21:51	1
13C2-8:2-FTS	105		50 - 200	07/12/24 07:57	07/12/24 21:51	1

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# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: LCS 380-98721/24-A**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	64.8		ng/L		108	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	62.1		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	58.8		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	60.5		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	65.5		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	61.4		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	65.1		ng/L		108	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	60.8		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	60.9		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	60.5		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	60.1	62.8		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	64.1		ng/L		107	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	60.7		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	62.3		ng/L		104	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	61.4		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	61.4		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	61.8		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	61.0		ng/L		101	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	60.9		ng/L		101	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.1	63.1		ng/L		105	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	63.2		ng/L		105	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	55.3		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	56.5		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	62.7		ng/L		104	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.1	57.1		ng/L		95	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	101		50 - 200

# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: LCS 380-98721/24-A**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C7 PFUnA	109		50 - 200
13C2 PFDoA	105		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	105		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	111		50 - 200
13C2-8:2-FTS	109		50 - 200

**Lab Sample ID: MRL 380-98721/23-A**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.35	J	ng/L		117	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.33	J	ng/L		116	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.18	J	ng/L		109	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.42	J	ng/L		121	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.47	J	ng/L		123	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.37	J	ng/L		118	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.49	J	ng/L		124	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.30	J	ng/L		115	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.18	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.30	J	ng/L		115	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.45	J	ng/L		122	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.54	J	ng/L		126	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.41	J	ng/L		120	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.37	J	ng/L		118	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.26	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.58	J	ng/L		128	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.42	J	ng/L		121	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.54	J	ng/L		127	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.30	J	ng/L		115	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	2.34	J	ng/L		117	50 - 150

# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: MRL 380-98721/23-A**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.18	J	ng/L		109	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.21	J	ng/L		110	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.21	J	ng/L		110	50 - 150

  

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	84		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	102		50 - 200
13C9 PFNA	97		50 - 200
13C7 PFUnA	104		50 - 200
13C2 PFDoA	105		50 - 200
13C4 PFBA	103		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	105		50 - 200

**Lab Sample ID: 380-103491-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	62.7		ng/L		104	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	59.7		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	58.4		ng/L		97	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	61.5		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	66.0		ng/L		110	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	61.5		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	64.2		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	60.1		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	60.5		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	60.5		ng/L		100	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: 380-103491-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	<2.0		60.2	63.0		ng/L		105	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	63.5		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	60.2		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	65.1		ng/L		108	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	61.2		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	62.8		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	62.1		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	61.1		ng/L		101	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	55.9		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	61.7		ng/L		102	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	66.3		ng/L		110	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	57.6		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	58.9		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	61.5		ng/L		102	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	59.2		ng/L		98	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	79		50 - 200
13C6 PFDA	93		50 - 200
13C5 PFHxA	90		50 - 200
13C4 PFHpA	90		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	88		50 - 200
13C7 PFUnA	89		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	94		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	118		50 - 200
13C2-6:2-FTS	118		50 - 200
13C2-8:2-FTS	109		50 - 200

# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: 380-103491-C-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	61.4		ng/L		102	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	59.1		ng/L		98	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	56.4		ng/L		94	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	57.0		ng/L		95	70 - 130	7	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.1	64.1		ng/L		107	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		60.1	60.3		ng/L		100	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	64.4		ng/L		107	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	58.0		ng/L		97	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.1	58.3		ng/L		97	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	60.3		ng/L		100	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		60.1	60.8		ng/L		101	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.1	62.8		ng/L		105	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		60.1	57.7		ng/L		96	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	62.2		ng/L		103	70 - 130	5	30
Perfluorobutanoic acid (PFBA)	<2.0		60.1	57.5		ng/L		96	70 - 130	6	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	61.0		ng/L		101	70 - 130	3	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	60.4		ng/L		100	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	60.1		ng/L		100	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	61.1		ng/L		102	70 - 130	9	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.1	62.3		ng/L		104	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	63.5		ng/L		106	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	55.7		ng/L		93	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	56.5		ng/L		94	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	60.3		ng/L		100	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	57.3		ng/L		95	70 - 130	3	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	89		50 - 200
13C6 PFDA	92		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	95		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	90		50 - 200

# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: 380-103491-C-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 98843**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 98721**

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C7 PFUnA	95		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	118		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	126		50 - 200
13C2-6:2-FTS	126		50 - 200
13C2-8:2-FTS	119		50 - 200

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

**Lab Sample ID: MBL 380-98587/20-A**  
**Matrix: Water**  
**Analysis Batch: 98769**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 98587**

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		07/11/24 12:30	07/12/24 12:06	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<0.58		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
N-ethylperfluorooctanesulfonamide cetic acid (NEtFOSAA)	<0.42		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/11/24 12:30	07/12/24 12:06	1

  

Surrogate	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
d5-NEtFOSAA	106		70 - 130	07/11/24 12:30	07/12/24 12:06	1
13C2 PFHxA	102		70 - 130	07/11/24 12:30	07/12/24 12:06	1
13C2 PFDA	105		70 - 130	07/11/24 12:30	07/12/24 12:06	1
13C3-GenX	100		70 - 130	07/11/24 12:30	07/12/24 12:06	1

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# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: LCS 380-98587/22-A**  
**Matrix: Water**  
**Analysis Batch: 98769**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98587**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	24.1		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	28.2		ng/L		113	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	25.7		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	27.3		ng/L		109	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	27.2		ng/L		109	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	26.9		ng/L		107	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	27.5		ng/L		110	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	28.0		ng/L		112	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	26.6		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	29.0		ng/L		116	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	25.1		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	27.5		ng/L		110	70 - 130
Perfluorononanoic acid (PFNA)	25.1	27.8		ng/L		111	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	25.4		ng/L		101	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	26.2		ng/L		105	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	28.0		ng/L		112	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	26.7		ng/L		106	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	27.9		ng/L		111	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	96		70 - 130
13C2 PFHxA	100		70 - 130
13C2 PFDA	96		70 - 130
13C3-GenX	90		70 - 130

**Lab Sample ID: MRL 380-98587/21-A**  
**Matrix: Water**  
**Analysis Batch: 98769**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98587**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.28	J	ng/L		114	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.10	J	ng/L		105	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.22	J	ng/L		111	50 - 150

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# QC Sample Results

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

Job ID: 380-103363-1

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

**Lab Sample ID: MRL 380-98587/21-A**  
**Matrix: Water**  
**Analysis Batch: 98769**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 98587**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.06	J	ng/L		103	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.27	J	ng/L		113	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.27	J	ng/L		113	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.13	J	ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.12	J	ng/L		106	50 - 150
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.98	J	ng/L		99	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.21	J	ng/L		110	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
d5-NEtFOSAA	99		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	100		70 - 130
13C3-GenX	90		70 - 130

**Lab Sample ID: 380-102899-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 98769**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 98587**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.0	21.8		ng/L		87	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.0	28.7		ng/L		112	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.0	26.4		ng/L		105	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.0	26.7		ng/L		107	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.0	26.9		ng/L		107	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.0	25.8		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.0	26.3		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.0	28.6		ng/L		112	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.0	28.0		ng/L		112	70 - 130

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# QC Association Summary

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

Job ID: 380-103363-1

## LCMS

### Prep Batch: 98587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-103363-1	MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-103363-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-103363-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-103363-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1 DW	
380-103363-5	FB: MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-103363-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-103363-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-103363-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1 DW	
MBL 380-98587/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-98587/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-98587/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-102899-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-102899-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Prep Batch: 98598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-103363-1	MOANALUA WELLS	Total/NA	Water	533	
380-103363-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-103363-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-103363-5	FB: MOANALUA WELLS	Total/NA	Water	533	
380-103363-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-103363-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
MBL 380-98598/20-A	Method Blank	Total/NA	Water	533	
LCS 380-98598/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-98598/21-A	Lab Control Sample	Total/NA	Water	533	

### Prep Batch: 98721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-103363-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	
380-103363-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	
MBL 380-98721/22-A	Method Blank	Total/NA	Water	533	
LCS 380-98721/24-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-98721/23-A	Lab Control Sample	Total/NA	Water	533	
380-103491-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-103491-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

### Analysis Batch: 98769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-103363-1	MOANALUA WELLS	Total/NA	Water	537.1	98587
380-103363-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	98587
380-103363-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	98587
380-103363-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1	98587
380-103363-5	FB: MOANALUA WELLS	Total/NA	Water	537.1	98587
380-103363-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	98587
380-103363-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	98587
380-103363-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1	98587
MBL 380-98587/20-A	Method Blank	Total/NA	Water	537.1	98587
LCS 380-98587/22-A	Lab Control Sample	Total/NA	Water	537.1	98587
MRL 380-98587/21-A	Lab Control Sample	Total/NA	Water	537.1	98587
380-102899-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	98587
380-102899-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	98587

Eurofins Eaton Analytical Pomona

# QC Association Summary

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

Job ID: 380-103363-1

## LCMS

### Analysis Batch: 98781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-103363-1	MOANALUA WELLS	Total/NA	Water	533	98598
380-103363-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	98598
380-103363-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	98598
380-103363-5	FB: MOANALUA WELLS	Total/NA	Water	533	98598
380-103363-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	98598
380-103363-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	98598
MBL 380-98598/20-A	Method Blank	Total/NA	Water	533	98598
LCS 380-98598/22-A	Lab Control Sample	Total/NA	Water	533	98598
MRL 380-98598/21-A	Lab Control Sample	Total/NA	Water	533	98598

### Analysis Batch: 98843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-103363-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	98721
380-103363-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	98721
MBL 380-98721/22-A	Method Blank	Total/NA	Water	533	98721
LCS 380-98721/24-A	Lab Control Sample	Total/NA	Water	533	98721
MRL 380-98721/23-A	Lab Control Sample	Total/NA	Water	533	98721
380-103491-B-1-A MS	Matrix Spike	Total/NA	Water	533	98721
380-103491-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	98721

# Lab Chronicle

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

Job ID: 380-103363-1

## Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-103363-1

Date Collected: 07/08/24 10:12

Matrix: Water

Date Received: 07/10/24 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			98598	N8NE	EA POM	07/11/24 16:20
Total/NA	Analysis	533		1	98781	Y5FM	EA POM	07/12/24 20:23
Total/NA	Prep	537.1 DW			98587	G9MN	EA POM	07/11/24 12:30
Total/NA	Analysis	537.1		1	98769	Y5FM	EA POM	07/12/24 13:22

## Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-103363-2

Date Collected: 07/08/24 11:03

Matrix: Water

Date Received: 07/10/24 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			98598	N8NE	EA POM	07/11/24 16:20
Total/NA	Analysis	533		1	98781	Y5FM	EA POM	07/12/24 20:32
Total/NA	Prep	537.1 DW			98587	G9MN	EA POM	07/11/24 12:30
Total/NA	Analysis	537.1		1	98769	Y5FM	EA POM	07/12/24 13:32

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

Lab Sample ID: 380-103363-3

Date Collected: 07/08/24 11:30

Matrix: Water

Date Received: 07/10/24 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			98598	N8NE	EA POM	07/11/24 16:20
Total/NA	Analysis	533		1	98781	Y5FM	EA POM	07/12/24 20:42
Total/NA	Prep	537.1 DW			98587	G9MN	EA POM	07/11/24 12:30
Total/NA	Analysis	537.1		1	98769	Y5FM	EA POM	07/12/24 13:41

## Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-103363-4

Date Collected: 07/08/24 10:39

Matrix: Water

Date Received: 07/10/24 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			98721	A5GB	EA POM	07/12/24 07:57
Total/NA	Analysis	533		1	98843	Y5FM	EA POM	07/12/24 23:49
Total/NA	Prep	537.1 DW			98587	G9MN	EA POM	07/11/24 12:30
Total/NA	Analysis	537.1		1	98769	Y5FM	EA POM	07/12/24 13:51

## Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-103363-5

Date Collected: 07/08/24 10:12

Matrix: Water

Date Received: 07/10/24 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			98598	N8NE	EA POM	07/11/24 16:20
Total/NA	Analysis	533		1	98781	Y5FM	EA POM	07/12/24 20:51
Total/NA	Prep	537.1 DW			98587	G9MN	EA POM	07/11/24 12:30
Total/NA	Analysis	537.1		1	98769	Y5FM	EA POM	07/12/24 14:00

# Lab Chronicle

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

Job ID: 380-103363-1

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-103363-6**

Date Collected: 07/08/24 11:03

Matrix: Water

Date Received: 07/10/24 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			98598	N8NE	EA POM	07/11/24 16:20
Total/NA	Analysis	533		1	98781	Y5FM	EA POM	07/12/24 21:01
Total/NA	Prep	537.1 DW			98587	G9MN	EA POM	07/11/24 12:30
Total/NA	Analysis	537.1		1	98769	Y5FM	EA POM	07/12/24 14:10

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

**Lab Sample ID: 380-103363-7**

Date Collected: 07/08/24 11:30

Matrix: Water

Date Received: 07/10/24 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			98598	N8NE	EA POM	07/11/24 16:20
Total/NA	Analysis	533		1	98781	Y5FM	EA POM	07/12/24 21:11
Total/NA	Prep	537.1 DW			98587	G9MN	EA POM	07/11/24 12:30
Total/NA	Analysis	537.1		1	98769	Y5FM	EA POM	07/12/24 14:20

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-103363-8**

Date Collected: 07/08/24 10:39

Matrix: Water

Date Received: 07/10/24 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			98721	A5GB	EA POM	07/12/24 07:57
Total/NA	Analysis	533		1	98843	Y5FM	EA POM	07/13/24 00:00
Total/NA	Prep	537.1 DW			98587	G9MN	EA POM	07/11/24 12:30
Total/NA	Analysis	537.1		1	98769	Y5FM	EA POM	07/12/24 14:39

**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: 380-103363-1

## Laboratory: Eurofins Eaton Analytical Pomona

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

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

- 1
- 2
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# Method Summary

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

Job ID: 380-103363-1

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: 380-103363-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-103363-1	MOANALUA WELLS	Water	07/08/24 10:12	07/10/24 09:55
380-103363-2	AIEA GULCH WELLS PUMP 2	Water	07/08/24 11:03	07/10/24 09:55
380-103363-3	AIEA WELLS PUMPS 1&2 (260) P2	Water	07/08/24 11:30	07/10/24 09:55
380-103363-4	HALAWA WELLS UNITS 1&2 P1	Water	07/08/24 10:39	07/10/24 09:55
380-103363-5	FB: MOANALUA WELLS	Water	07/08/24 10:12	07/10/24 09:55
380-103363-6	FB: AIEA GULCH WELLS PUMP 2	Water	07/08/24 11:03	07/10/24 09:55
380-103363-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Water	07/08/24 11:30	07/10/24 09:55
380-103363-8	FB: HALAWA WELLS UNITS 1&2 P1	Water	07/08/24 10:39	07/10/24 09:55

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# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-103363-1

**Login Number: 103363**  
**List Number: 1**  
**Creator: Elyas, Matthew**

**List Source: Eurofins Eaton Analytical Pomona**

Question	Answer	Comment
The coolers custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
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	

