

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

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Erwin Kawata  
City & County of Honolulu  
630 South Beretania Street  
Public Service Bldg. Room 310  
Honolulu, Hawaii 96843

Generated 9/17/2024 3:10:33 PM

## JOB DESCRIPTION

RED-HILL

## JOB NUMBER

380-112437-1

# Eurofins Eaton Analytical Pomona

## Job Notes

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

The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

## Compliance Statement

1. Laboratory is accredited in accordance with TNI 2016 Standards and ISO/IEC 17025:2017.
2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
3. Test results relate only to the sample(s) tested.
4. This report shall not be reproduced except in full, without the written approval of the laboratory.
5. Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. (DW, Water matrices)

## Authorization



Generated  
9/17/2024 3:10:33 PM

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Definitions/Glossary . . . . .	4
Case Narrative . . . . .	5
Detection Summary . . . . .	6
Client Sample Results . . . . .	7
Action Limit Summary . . . . .	22
Surrogate Summary . . . . .	26
Isotope Dilution Summary . . . . .	27
QC Sample Results . . . . .	29
QC Association Summary . . . . .	40
Lab Chronicle . . . . .	42
Certification Summary . . . . .	44
Method Summary . . . . .	45
Sample Summary . . . . .	46
Chain of Custody . . . . .	47
Receipt Checklists . . . . .	48

# Definitions/Glossary

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

Job ID: 380-112437-1

## 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: 380-112437-1

**Job ID: 380-112437-1**

**Eurofins Eaton Analytical Pomona**

## Job Narrative 380-112437-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Receipt

The samples were received on 9/11/2024 10:09 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 4.2°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 (380-112437-1)

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: 380-112437-1

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

Lab Sample ID: 380-112437-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.3		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)	2.7		2.0	ng/L	1		537.1	Total/NA

## Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-112437-2

No Detections.

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

Lab Sample ID: 380-112437-3

No Detections.

## Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-112437-4

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)	2.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.0		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)	2.5		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	ng/L	1		537.1	Total/NA

## Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-112437-5

No Detections.

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

Lab Sample ID: 380-112437-6

No Detections.

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

Lab Sample ID: 380-112437-7

No Detections.

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

Lab Sample ID: 380-112437-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-1**

**Date Collected: 09/09/24 10:06**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.2</b>		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.1</b>		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
<b>Perfluoropentanoic acid (PFPeA)</b>	<b>2.3</b>		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C6 PFDA	78		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C5 PFHxA	92		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C4 PFHpA	90		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C8 PFOA	85		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C9 PFNA	79		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C7 PFUnA	85		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C2 PFDoA	87		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C4 PFBA	91		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C5 PFPeA	97		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C3 PFBS	109		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C3 PFHxS	114		50 - 200	09/14/24 10:10	09/16/24 08:23	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-1**

Date Collected: 09/09/24 10:06

Matrix: Water

Date Received: 09/11/24 10:09

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	111		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C2-4:2-FTS	144		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C2-6:2-FTS	144		50 - 200	09/14/24 10:10	09/16/24 08:23	1
13C2-8:2-FTS	129		50 - 200	09/14/24 10:10	09/16/24 08:23	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		09/13/24 06:00	09/13/24 23:54	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.4</b>		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>2.3</b>		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.0</b>		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.7</b>		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/13/24 06:00	09/13/24 23:54	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	118		70 - 130			09/13/24 06:00	09/13/24 23:54	1
13C2 PFHxA	111		70 - 130			09/13/24 06:00	09/13/24 23:54	1
13C2 PFDA	106		70 - 130			09/13/24 06:00	09/13/24 23:54	1
13C3-GenX	106		70 - 130			09/13/24 06:00	09/13/24 23:54	1

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

**Lab Sample ID: 380-112437-2**

Date Collected: 09/09/24 10:37

Matrix: Water

Date Received: 09/11/24 10:09

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1

Eurofins Eaton Analytical Pomona



# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-2**

Date Collected: 09/09/24 10:37

Matrix: Water

Date Received: 09/11/24 10:09

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:32	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C3 HFPO-DA	75		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C6 PFDA	68		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C5 PFHxA	84		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C4 PFHpA	81		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C8 PFOA	73		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C9 PFNA	65		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C7 PFUnA	77		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C2 PFDoA	84		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C4 PFBA	86		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C5 PFPeA	87		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C3 PFBS	115		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C3 PFHxS	118		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C8 PFOS	115		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C2-4:2-FTS	150		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C2-6:2-FTS	151		50 - 200			09/14/24 10:10	09/16/24 08:32	1
13C2-8:2-FTS	137		50 - 200			09/14/24 10:10	09/16/24 08:32	1

# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-2**

**Date Collected: 09/09/24 10:37**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:04	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	106		70 - 130			09/13/24 06:00	09/14/24 00:04	1
13C2 PFHxA	112		70 - 130			09/13/24 06:00	09/14/24 00:04	1
13C2 PFDA	107		70 - 130			09/13/24 06:00	09/14/24 00:04	1
13C3-GenX	107		70 - 130			09/13/24 06:00	09/14/24 00:04	1

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

**Lab Sample ID: 380-112437-3**

**Date Collected: 09/09/24 11:01**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-3**

**Date Collected: 09/09/24 11:01**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	80		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C6 PFDA	93		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C5 PFHxA	90		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C4 PFHpA	92		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C8 PFOA	91		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C9 PFNA	87		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C7 PFUnA	100		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C2 PFDoA	100		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C4 PFBA	92		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C5 PFPeA	95		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C3 PFBS	113		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C3 PFHxS	116		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C8 PFOS	114		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C2-4:2-FTS	141		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C2-6:2-FTS	149		50 - 200	09/14/24 10:10	09/16/24 08:42	1
13C2-8:2-FTS	130		50 - 200	09/14/24 10:10	09/16/24 08:42	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		09/13/24 06:00	09/14/24 00:15	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-3**

Date Collected: 09/09/24 11:01

Matrix: Water

Date Received: 09/11/24 10:09

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	111		70 - 130			09/13/24 06:00	09/14/24 00:15	1
13C2 PFHxA	117		70 - 130			09/13/24 06:00	09/14/24 00:15	1
13C2 PFDA	110		70 - 130			09/13/24 06:00	09/14/24 00:15	1
13C3-GenX	109		70 - 130			09/13/24 06:00	09/14/24 00:15	1

**Client Sample ID: KA'AMILO WELLS**

**Lab Sample ID: 380-112437-4**

Date Collected: 09/09/24 11:28

Matrix: Water

Date Received: 09/11/24 10:09

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.3</b>		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>2.0</b>		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.6</b>		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.1</b>		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

**Client Sample ID: KA'AMILO WELLS**

**Lab Sample ID: 380-112437-4**

Date Collected: 09/09/24 11:28

Matrix: Water

Date Received: 09/11/24 10:09

**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-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
<b>Perfluoropentanoic acid (PFPeA)</b>	<b>2.0</b>		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 08:51	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C3 HFPO-DA	82		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C6 PFDA	61		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C5 PFHxA	86		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C4 PFHpA	87		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C8 PFOA	77		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C9 PFNA	65		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C7 PFUnA	70		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C2 PFDoA	76		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C4 PFBA	80		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C5 PFPeA	92		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C3 PFBS	109		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C3 PFHxS	111		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C8 PFOS	115		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C2-4:2-FTS	140		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C2-6:2-FTS	150		50 - 200			09/14/24 10:10	09/16/24 08:51	1
13C2-8:2-FTS	133		50 - 200			09/14/24 10:10	09/16/24 08:51	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		09/13/24 06:00	09/14/24 00:26	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.0</b>		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>2.4</b>		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.5</b>		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.7</b>		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

**Client Sample ID: KA'AMILO WELLS**

**Lab Sample ID: 380-112437-4**

**Date Collected: 09/09/24 11:28**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130			09/13/24 06:00	09/14/24 00:26	1
13C2 PFHxA	103		70 - 130			09/13/24 06:00	09/14/24 00:26	1
13C2 PFDA	104		70 - 130			09/13/24 06:00	09/14/24 00:26	1
13C3-GenX	104		70 - 130			09/13/24 06:00	09/14/24 00:26	1

**Client Sample ID: FB KA'AMILO WELLS**

**Lab Sample ID: 380-112437-5**

**Date Collected: 09/09/24 11:28**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

**Client Sample ID: FB KA'AMILO WELLS**

**Lab Sample ID: 380-112437-5**

**Date Collected: 09/09/24 11:28**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:01	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	98		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C6 PFDA	109		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C5 PFHxA	117		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C4 PFHpA	119		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C8 PFOA	114		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C9 PFNA	111		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C7 PFUnA	109		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C2 PFDoA	109		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C4 PFBA	115		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C5 PFPeA	117		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C3 PFBS	113		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C3 PFHxS	111		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C8 PFOS	113		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C2-4:2-FTS	140		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C2-6:2-FTS	148		50 - 200			09/14/24 10:10	09/16/24 09:01	1
13C2-8:2-FTS	128		50 - 200			09/14/24 10:10	09/16/24 09:01	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:37	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

**Client Sample ID: FB KA'AMILO WELLS**

**Lab Sample ID: 380-112437-5**

**Date Collected: 09/09/24 11:28**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130	09/13/24 06:00	09/14/24 00:37	1
13C2 PFHxA	111		70 - 130	09/13/24 06:00	09/14/24 00:37	1
13C2 PFDA	111		70 - 130	09/13/24 06:00	09/14/24 00:37	1
13C3-GenX	110		70 - 130	09/13/24 06:00	09/14/24 00:37	1

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

**Lab Sample ID: 380-112437-6**

**Date Collected: 09/09/24 10:06**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:10	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
13C3 HFPO-DA	99		50 - 200	09/14/24 10:10	09/16/24 09:10	1		
13C6 PFDA	112		50 - 200	09/14/24 10:10	09/16/24 09:10	1		
13C5 PFHxA	117		50 - 200	09/14/24 10:10	09/16/24 09:10	1		

Eurofins Eaton Analytical Pomona



# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-6**

Date Collected: 09/09/24 10:06

Matrix: Water

Date Received: 09/11/24 10:09

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	119		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C8 PFOA	115		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C9 PFNA	109		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C7 PFUnA	110		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C2 PFDoA	108		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C4 PFBA	116		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C5 PFPeA	118		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C3 PFBS	115		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C3 PFHxS	113		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C8 PFOS	116		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C2-4:2-FTS	149		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C2-6:2-FTS	151		50 - 200	09/14/24 10:10	09/16/24 09:10	1
13C2-8:2-FTS	135		50 - 200	09/14/24 10:10	09/16/24 09:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	108		70 - 130	09/13/24 06:00	09/14/24 00:47	1
13C2 PFHxA	113		70 - 130	09/13/24 06:00	09/14/24 00:47	1
13C2 PFDA	107		70 - 130	09/13/24 06:00	09/14/24 00:47	1
13C3-GenX	111		70 - 130	09/13/24 06:00	09/14/24 00:47	1

# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-7**

**Date Collected: 09/09/24 10:37**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C6 PFDA	112		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C5 PFHxA	114		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C4 PFHpA	117		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C8 PFOA	113		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C9 PFNA	111		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C7 PFUnA	112		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C2 PFDoA	108		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C4 PFBA	118		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C5 PFPeA	124		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C3 PFBS	112		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C3 PFHxS	115		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C8 PFOS	116		50 - 200	09/14/24 10:10	09/16/24 09:30	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-7**

Date Collected: 09/09/24 10:37

Matrix: Water

Date Received: 09/11/24 10:09

**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	141		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C2-6:2-FTS	147		50 - 200	09/14/24 10:10	09/16/24 09:30	1
13C2-8:2-FTS	130		50 - 200	09/14/24 10:10	09/16/24 09:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 00:58	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	117		70 - 130	09/13/24 06:00	09/14/24 00:58	1		
13C2 PFHxA	115		70 - 130	09/13/24 06:00	09/14/24 00:58	1		
13C2 PFDA	114		70 - 130	09/13/24 06:00	09/14/24 00:58	1		
13C3-GenX	107		70 - 130	09/13/24 06:00	09/14/24 00:58	1		

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

**Lab Sample ID: 380-112437-8**

Date Collected: 09/09/24 11:01

Matrix: Water

Date Received: 09/11/24 10:09

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-8**

**Date Collected: 09/09/24 11:01**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

**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		09/14/24 10:10	09/16/24 09:39	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/14/24 10:10	09/16/24 09:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	103		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C6 PFDA	112		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C5 PFHxA	112		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C4 PFHpA	117		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C8 PFOA	115		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C9 PFNA	113		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C7 PFUnA	110		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C2 PFDoA	113		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C4 PFBA	113		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C5 PFPeA	127		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C3 PFBS	113		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C3 PFHxS	115		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C8 PFOS	115		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C2-4:2-FTS	147		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C2-6:2-FTS	151		50 - 200	09/14/24 10:10	09/16/24 09:39	1
13C2-8:2-FTS	134		50 - 200	09/14/24 10:10	09/16/24 09:39	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-8**

**Date Collected: 09/09/24 11:01**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/13/24 06:00	09/14/24 01:09	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	113		70 - 130			09/13/24 06:00	09/14/24 01:09	1
13C2 PFHxA	116		70 - 130			09/13/24 06:00	09/14/24 01:09	1
13C2 PFDA	109		70 - 130			09/13/24 06:00	09/14/24 01:09	1
13C3-GenX	108		70 - 130			09/13/24 06:00	09/14/24 01:09	1

# Action Limit Summary

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-1**

## 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)	2.2		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		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: 380-112437-2**

## 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: 380-112437-3**

## 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: 380-112437-1

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

Lab Sample ID: 380-112437-3

### Compliance Check

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

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

## Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-112437-4

### 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)	2.6		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		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)	3.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.5		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		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 KA'AMILO WELLS

Lab Sample ID: 380-112437-5

### 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: 380-112437-1

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

**Lab Sample ID: 380-112437-6**

## 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 GULCH WELLS PUMP 2**

**Lab Sample ID: 380-112437-7**

## 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 AIEA WELLS PUMPS 1&2 (260) P2**

**Lab Sample ID: 380-112437-8**

## 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

Eurofins Eaton Analytical Pomona



# Action Limit Summary

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-8**

## 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: 380-112437-1

**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)
380-112437-1	HALAWA WELLS UNITS 1 & 2 F	118	111	106	106
380-112437-2	AIEA GULCH WELLS PUMP 2	106	112	107	107
380-112437-3	AIEA WELLS PUMPS 1&2 (260) P2	111	117	110	109
380-112437-4	KA'AMILO WELLS	113	103	104	104
380-112437-5	FB KA'AMILO WELLS	107	111	111	110
380-112437-6	FB HALAWA WELLS UNITS 1 & 2 P1	108	113	107	111
380-112437-7	FB AIEA GULCH WELLS PUMP 2	117	115	114	107
380-112437-8	FB AIEA WELLS PUMPS 1&2 (260) P2	113	116	109	108
380-112581-B-1-B MS	Matrix Spike	109	116	114	110
380-112581-C-1-B MSD	Matrix Spike Duplicate	104	116	114	111
LCS 380-108219/22-A	Lab Control Sample	110	118	114	110
MBL 380-108219/20-A	Method Blank	114	117	114	114
MRL 380-108219/21-A	Lab Control Sample	116	111	112	107

**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: 380-112437-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-112437-1	HALAWA WELLS UNITS 1 & 2 F	89	78	92	90	85	79	85	87
380-112437-2	AIEA GULCH WELLS PUMP 2	75	68	84	81	73	65	77	84
380-112437-3	AIEA WELLS PUMPS 1&2 (260) P2	80	93	90	92	91	87	100	100
380-112437-4	KA'AMILO WELLS	82	61	86	87	77	65	70	76
380-112437-5	FB KA'AMILO WELLS	98	109	117	119	114	111	109	109
380-112437-6	FB HALAWA WELLS UNITS 1 & 2 P1	99	112	117	119	115	109	110	108
380-112437-7	FB AIEA GULCH WELLS PUMP 2	96	112	114	117	113	111	112	108
380-112437-8	FB AIEA WELLS PUMPS 1&2 (260) P2	103	112	112	117	115	113	110	113
380-112580-B-1-A MS	Matrix Spike	93	74	92	87	83	74	81	90
380-112580-C-1-A MSD	Matrix Spike Duplicate	94	92	94	92	92	89	98	104
LCS 380-108420/24-A	Lab Control Sample	118	118	118	115	116	108	117	117
MBL 380-108420/22-A	Method Blank	98	118	120	120	118	109	116	115
MRL 380-108420/23-A	Lab Control Sample	99	114	122	123	117	109	109	112

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-112437-1	HALAWA WELLS UNITS 1 & 2 F	91	97	109	114	111	144	144	129
380-112437-2	AIEA GULCH WELLS PUMP 2	86	87	115	118	115	150	151	137
380-112437-3	AIEA WELLS PUMPS 1&2 (260) P2	92	95	113	116	114	141	149	130
380-112437-4	KA'AMILO WELLS	80	92	109	111	115	140	150	133
380-112437-5	FB KA'AMILO WELLS	115	117	113	111	113	140	148	128
380-112437-6	FB HALAWA WELLS UNITS 1 & 2 P1	116	118	115	113	116	149	151	135
380-112437-7	FB AIEA GULCH WELLS PUMP 2	118	124	112	115	116	141	147	130
380-112437-8	FB AIEA WELLS PUMPS 1&2 (260) P2	113	127	113	115	115	147	151	134
380-112580-B-1-A MS	Matrix Spike	92	99	114	117	113	141	135	137
380-112580-C-1-A MSD	Matrix Spike Duplicate	94	102	115	117	114	143	145	141
LCS 380-108420/24-A	Lab Control Sample	111	122	122	122	116	138	138	131
MBL 380-108420/22-A	Method Blank	114	120	118	128	119	146	140	135
MRL 380-108420/23-A	Lab Control Sample	115	122	121	123	115	145	141	134

### Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- 13C7PUA = 13C7 PFUnA
- PFDoA = 13C2 PFDoA
- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- C3PFBS = 13C3 PFBS
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS

# Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

42FTS = 13C2-4:2-FTS

62FTS = 13C2-6:2-FTS

82FTS = 13C2-8:2-FTS

Job ID: 380-112437-1

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

# QC Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: MBL 380-108420/22-A**

**Matrix: Water**

**Analysis Batch: 108557**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 108420**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/14/24 10:10	09/16/24 06:57	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	98		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C6 PFDA	118		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C5 PFHxA	120		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C4 PFHpA	120		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C8 PFOA	118		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C9 PFNA	109		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C7 PFUnA	116		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C2 PFDoA	115		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C4 PFBA	114		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C5 PFPeA	120		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C3 PFBS	118		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C3 PFHxS	128		50 - 200	09/14/24 10:10	09/16/24 06:57	1

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: MBL 380-108420/22-A**  
**Matrix: Water**  
**Analysis Batch: 108557**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 108420**

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	119		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C2-4:2-FTS	146		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C2-6:2-FTS	140		50 - 200	09/14/24 10:10	09/16/24 06:57	1
13C2-8:2-FTS	135		50 - 200	09/14/24 10:10	09/16/24 06:57	1

**Lab Sample ID: LCS 380-108420/24-A**  
**Matrix: Water**  
**Analysis Batch: 108557**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 108420**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	116		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	107		ng/L		89	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	107		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	109		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	107		ng/L		89	70 - 130
Perfluorodecanoic acid (PFDA)	120	102		ng/L		85	70 - 130
Perfluorododecanoic acid (PFDoA)	120	106		ng/L		88	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	104		ng/L		86	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	104		ng/L		87	70 - 130
Perfluorohexanoic acid (PFHxA)	120	106		ng/L		88	70 - 130
Perfluorononanoic acid (PFNA)	120	110		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	110		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	120	106		ng/L		88	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	102		ng/L		85	70 - 130
Perfluorobutanoic acid (PFBA)	120	108		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	109		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	109		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	107		ng/L		89	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	117		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	97.6		ng/L		81	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	113		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	107		ng/L		89	70 - 130
Perfluoropentanoic acid (PFPeA)	120	105		ng/L		87	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	110		ng/L		92	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: LCS 380-108420/24-A**  
**Matrix: Water**  
**Analysis Batch: 108557**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 108420**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	103		ng/L		86	70 - 130
<b>LCS LCS</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
13C3 HFPO-DA	118		50 - 200				
13C6 PFDA	118		50 - 200				
13C5 PFHxA	118		50 - 200				
13C4 PFHpA	115		50 - 200				
13C8 PFOA	116		50 - 200				
13C9 PFNA	108		50 - 200				
13C7 PFUnA	117		50 - 200				
13C2 PFDoA	117		50 - 200				
13C4 PFBA	111		50 - 200				
13C5 PFPeA	122		50 - 200				
13C3 PFBS	122		50 - 200				
13C3 PFHxS	122		50 - 200				
13C8 PFOS	116		50 - 200				
13C2-4:2-FTS	138		50 - 200				
13C2-6:2-FTS	138		50 - 200				
13C2-8:2-FTS	131		50 - 200				

**Lab Sample ID: MRL 380-108420/23-A**  
**Matrix: Water**  
**Analysis Batch: 108557**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 108420**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.12	J	ng/L		105	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.97	J	ng/L		98	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.97	J	ng/L		98	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.96	J	ng/L		97	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	1.95	J	ng/L		97	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.06	J	ng/L		102	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.00	J	ng/L		100	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.92	J	ng/L		96	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: MRL 380-108420/23-A**  
**Matrix: Water**  
**Analysis Batch: 108557**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 108420**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.12	J	ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.34	J	ng/L		116	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.44	J	ng/L		122	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.45	J	ng/L		122	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.87	J	ng/L		93	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.14	J	ng/L		107	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.91	J	ng/L		95	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	99		50 - 200
13C6 PFDA	114		50 - 200
13C5 PFHxA	122		50 - 200
13C4 PFHpA	123		50 - 200
13C8 PFOA	117		50 - 200
13C9 PFNA	109		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	112		50 - 200
13C4 PFBA	115		50 - 200
13C5 PFPeA	122		50 - 200
13C3 PFBS	121		50 - 200
13C3 PFHxS	123		50 - 200
13C8 PFOS	115		50 - 200
13C2-4:2-FTS	145		50 - 200
13C2-6:2-FTS	141		50 - 200
13C2-8:2-FTS	134		50 - 200

**Lab Sample ID: 380-112580-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 108557**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 108420**

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		121	111		ng/L		92	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	105		ng/L		87	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	112		ng/L		93	70 - 130

Eurofins Eaton Analytical Pomona



# QC Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112580-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 108557**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 108420**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		121	107		ng/L		89	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	108		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	111		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	108		ng/L		89	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	107		ng/L		89	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	105		ng/L		87	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	109		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	111		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	111		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	111		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	109		ng/L		90	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	109		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	109		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	109		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	110		ng/L		91	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	118		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	102		ng/L		85	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	119		ng/L		98	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	109		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	109		ng/L		91	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	108		ng/L		89	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	108		ng/L		90	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	93		50 - 200
13C6 PFDA	74		50 - 200
13C5 PFHxA	92		50 - 200
13C4 PFHpA	87		50 - 200
13C8 PFOA	83		50 - 200
13C9 PFNA	74		50 - 200
13C7 PFUnA	81		50 - 200
13C2 PFDoA	90		50 - 200
13C4 PFBA	92		50 - 200
13C5 PFPeA	99		50 - 200
13C3 PFBS	114		50 - 200
13C3 PFHxS	117		50 - 200
13C8 PFOS	113		50 - 200

# QC Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112580-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 108557**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 108420**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	141		50 - 200
13C2-6:2-FTS	135		50 - 200
13C2-8:2-FTS	137		50 - 200

**Lab Sample ID: 380-112580-C-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 108557**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 108420**

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	113		ng/L		94	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	109		ng/L		90	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	105		ng/L		88	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	110		ng/L		92	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	109		ng/L		91	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		120	110		ng/L		91	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	102		ng/L		85	70 - 130	6	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	106		ng/L		88	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	107		ng/L		88	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	111		ng/L		92	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		120	112		ng/L		93	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	111		ng/L		92	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		120	108		ng/L		90	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	110		ng/L		91	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		120	112		ng/L		93	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	108		ng/L		90	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	114		ng/L		95	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	111		ng/L		92	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	131		ng/L		109	70 - 130	11	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	104		ng/L		86	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	115		ng/L		95	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	105		ng/L		87	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	107		ng/L		89	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	108		ng/L		90	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	111		ng/L		92	70 - 130	2	30

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-112437-1

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	94		50 - 200
13C6 PFDA	92		50 - 200
13C5 PFHxA	94		50 - 200
13C4 PFHpA	92		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	89		50 - 200
13C7 PFUnA	98		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	94		50 - 200
13C5 PFPeA	102		50 - 200
13C3 PFBS	115		50 - 200
13C3 PFHxS	117		50 - 200
13C8 PFOS	114		50 - 200
13C2-4:2-FTS	143		50 - 200
13C2-6:2-FTS	145		50 - 200
13C2-8:2-FTS	141		50 - 200

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

**Lab Sample ID: MBL 380-108219/20-A**  
**Matrix: Water**  
**Analysis Batch: 108302**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 108219**

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/13/24 06:00	09/13/24 22:39	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	114		70 - 130			09/13/24 06:00	09/13/24 22:39	1
13C2 PFHxA	117		70 - 130			09/13/24 06:00	09/13/24 22:39	1
13C2 PFDA	114		70 - 130			09/13/24 06:00	09/13/24 22:39	1

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: MBL 380-108219/20-A**  
**Matrix: Water**  
**Analysis Batch: 108302**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 108219**

<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	114	Qualifier	70 - 130	09/13/24 06:00	09/13/24 22:39	1

**Lab Sample ID: LCS 380-108219/22-A**  
**Matrix: Water**  
**Analysis Batch: 108302**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 108219**

<i>Analyte</i>	<i>Spike</i>	<i>LCS</i>	<i>LCS</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>	<i>Limits</i>
	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>					
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	49.9		ng/L		100		70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.1	51.3		ng/L		102		70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	52.6		ng/L		105		70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	51.9		ng/L		104		70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	51.9		ng/L		104		70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	50.1		ng/L		100		70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	51.5		ng/L		103		70 - 130
Perfluorooctanoic acid (PFOA)	50.1	52.1		ng/L		104		70 - 130
Perfluorodecanoic acid (PFDA)	50.1	51.2		ng/L		102		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.1	51.4		ng/L		103		70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	48.1		ng/L		96		70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	50.9		ng/L		102		70 - 130
Perfluorononanoic acid (PFNA)	50.1	53.6		ng/L		107		70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	54.2		ng/L		108		70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	50.6		ng/L		101		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	50.1	51.0		ng/L		102		70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	53.2		ng/L		106		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	53.1		ng/L		106		70 - 130

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
d5-NEtFOSAA	110		70 - 130
13C2 PFHxA	118		70 - 130
13C2 PFDA	114		70 - 130
13C3-GenX	110		70 - 130

# QC Sample Results

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

Job ID: 380-112437-1

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

**Lab Sample ID: MRL 380-108219/21-A**  
**Matrix: Water**  
**Analysis Batch: 108302**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 108219**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.33	J	ng/L		116	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.29	J	ng/L		114	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.29	J	ng/L		114	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.39	J	ng/L		119	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.32	J	ng/L		116	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.38	J	ng/L		119	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.10	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.38	J	ng/L		119	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.35	J	ng/L		117	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.18	J	ng/L		109	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.13	J	ng/L		106	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.29	J	ng/L		114	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.29	J	ng/L		114	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
d5-NEtFOSAA	116		70 - 130
13C2 PFHxA	111		70 - 130
13C2 PFDA	112		70 - 130
13C3-GenX	107		70 - 130

**Lab Sample ID: 380-112581-B-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 108302**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 108219**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	49.5		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.3		50.2	52.6		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	51.8		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	51.9		ng/L		103	70 - 130

Eurofins Eaton Analytical Pomona





# QC Association Summary

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

Job ID: 380-112437-1

## LCMS

### Prep Batch: 108219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-112437-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
380-112437-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-112437-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-112437-4	KA'AMILO WELLS	Total/NA	Water	537.1 DW	
380-112437-5	FB KA'AMILO WELLS	Total/NA	Water	537.1 DW	
380-112437-6	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
380-112437-7	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-112437-8	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
MBL 380-108219/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-108219/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-108219/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-112581-B-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-112581-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Analysis Batch: 108302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-112437-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	108219
380-112437-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	108219
380-112437-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	108219
380-112437-4	KA'AMILO WELLS	Total/NA	Water	537.1	108219
380-112437-5	FB KA'AMILO WELLS	Total/NA	Water	537.1	108219
380-112437-6	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	108219
380-112437-7	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	108219
380-112437-8	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	108219
MBL 380-108219/20-A	Method Blank	Total/NA	Water	537.1	108219
LCS 380-108219/22-A	Lab Control Sample	Total/NA	Water	537.1	108219
MRL 380-108219/21-A	Lab Control Sample	Total/NA	Water	537.1	108219
380-112581-B-1-B MS	Matrix Spike	Total/NA	Water	537.1	108219
380-112581-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	108219

### Prep Batch: 108420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-112437-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
380-112437-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-112437-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-112437-4	KA'AMILO WELLS	Total/NA	Water	533	
380-112437-5	FB KA'AMILO WELLS	Total/NA	Water	533	
380-112437-6	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
380-112437-7	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-112437-8	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
MBL 380-108420/22-A	Method Blank	Total/NA	Water	533	
LCS 380-108420/24-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-108420/23-A	Lab Control Sample	Total/NA	Water	533	
380-112580-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-112580-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

### Analysis Batch: 108557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-112437-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	108420
380-112437-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	108420
380-112437-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	108420



# QC Association Summary

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

Job ID: 380-112437-1

## LCMS (Continued)

### Analysis Batch: 108557 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-112437-4	KA'AMILO WELLS	Total/NA	Water	533	108420
380-112437-5	FB KA'AMILO WELLS	Total/NA	Water	533	108420
380-112437-6	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	108420
380-112437-7	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	108420
380-112437-8	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	108420
MBL 380-108420/22-A	Method Blank	Total/NA	Water	533	108420
LCS 380-108420/24-A	Lab Control Sample	Total/NA	Water	533	108420
MRL 380-108420/23-A	Lab Control Sample	Total/NA	Water	533	108420
380-112580-B-1-A MS	Matrix Spike	Total/NA	Water	533	108420
380-112580-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	108420

# Lab Chronicle

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

Job ID: 380-112437-1

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

Lab Sample ID: 380-112437-1

Date Collected: 09/09/24 10:06

Matrix: Water

Date Received: 09/11/24 10:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			108420	E9PK	EA POM	09/14/24 10:10
Total/NA	Analysis	533		1	108557	SZ9R	EA POM	09/16/24 08:23
Total/NA	Prep	537.1 DW			108219	G9MN	EA POM	09/13/24 06:00
Total/NA	Analysis	537.1		1	108302	Y5FM	EA POM	09/13/24 23:54

## Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-112437-2

Date Collected: 09/09/24 10:37

Matrix: Water

Date Received: 09/11/24 10:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			108420	E9PK	EA POM	09/14/24 10:10
Total/NA	Analysis	533		1	108557	SZ9R	EA POM	09/16/24 08:32
Total/NA	Prep	537.1 DW			108219	G9MN	EA POM	09/13/24 06:00
Total/NA	Analysis	537.1		1	108302	Y5FM	EA POM	09/14/24 00:04

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

Lab Sample ID: 380-112437-3

Date Collected: 09/09/24 11:01

Matrix: Water

Date Received: 09/11/24 10:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			108420	E9PK	EA POM	09/14/24 10:10
Total/NA	Analysis	533		1	108557	SZ9R	EA POM	09/16/24 08:42
Total/NA	Prep	537.1 DW			108219	G9MN	EA POM	09/13/24 06:00
Total/NA	Analysis	537.1		1	108302	Y5FM	EA POM	09/14/24 00:15

## Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-112437-4

Date Collected: 09/09/24 11:28

Matrix: Water

Date Received: 09/11/24 10:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			108420	E9PK	EA POM	09/14/24 10:10
Total/NA	Analysis	533		1	108557	SZ9R	EA POM	09/16/24 08:51
Total/NA	Prep	537.1 DW			108219	G9MN	EA POM	09/13/24 06:00
Total/NA	Analysis	537.1		1	108302	Y5FM	EA POM	09/14/24 00:26

## Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-112437-5

Date Collected: 09/09/24 11:28

Matrix: Water

Date Received: 09/11/24 10:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			108420	E9PK	EA POM	09/14/24 10:10
Total/NA	Analysis	533		1	108557	SZ9R	EA POM	09/16/24 09:01
Total/NA	Prep	537.1 DW			108219	G9MN	EA POM	09/13/24 06:00
Total/NA	Analysis	537.1		1	108302	Y5FM	EA POM	09/14/24 00:37

# Lab Chronicle

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

Job ID: 380-112437-1

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

**Lab Sample ID: 380-112437-6**

**Date Collected: 09/09/24 10:06**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			108420	E9PK	EA POM	09/14/24 10:10
Total/NA	Analysis	533		1	108557	SZ9R	EA POM	09/16/24 09:10
Total/NA	Prep	537.1 DW			108219	G9MN	EA POM	09/13/24 06:00
Total/NA	Analysis	537.1		1	108302	Y5FM	EA POM	09/14/24 00:47

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

**Lab Sample ID: 380-112437-7**

**Date Collected: 09/09/24 10:37**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			108420	E9PK	EA POM	09/14/24 10:10
Total/NA	Analysis	533		1	108557	SZ9R	EA POM	09/16/24 09:30
Total/NA	Prep	537.1 DW			108219	G9MN	EA POM	09/13/24 06:00
Total/NA	Analysis	537.1		1	108302	Y5FM	EA POM	09/14/24 00:58

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

**Lab Sample ID: 380-112437-8**

**Date Collected: 09/09/24 11:01**

**Matrix: Water**

**Date Received: 09/11/24 10:09**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			108420	E9PK	EA POM	09/14/24 10:10
Total/NA	Analysis	533		1	108557	SZ9R	EA POM	09/16/24 09:39
Total/NA	Prep	537.1 DW			108219	G9MN	EA POM	09/13/24 06:00
Total/NA	Analysis	537.1		1	108302	Y5FM	EA POM	09/14/24 01:09

**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: 380-112437-1

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

# Method Summary

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

Job ID: 380-112437-1

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: 380-112437-1




Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-112437-1	HALAWA WELLS UNITS 1 & 2 P1	Water	09/09/24 10:06	09/11/24 10:09
380-112437-2	AIEA GULCH WELLS PUMP 2	Water	09/09/24 10:37	09/11/24 10:09
380-112437-3	AIEA WELLS PUMPS 1&2 (260) P2	Water	09/09/24 11:01	09/11/24 10:09
380-112437-4	KA'AMILO WELLS	Water	09/09/24 11:28	09/11/24 10:09
380-112437-5	FB KA'AMILO WELLS	Water	09/09/24 11:28	09/11/24 10:09
380-112437-6	FB HALAWA WELLS UNITS 1 & 2 P1	Water	09/09/24 10:06	09/11/24 10:09
380-112437-7	FB AIEA GULCH WELLS PUMP 2	Water	09/09/24 10:37	09/11/24 10:09
380-112437-8	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	09/09/24 11:01	09/11/24 10:09

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

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

**Chain of Custody Record**



<b>Client Information</b>		Sampler: balley	Lap #M: Arada Rachelle	COC No: 380-27941.2757.2										
Client Contact: Dr. Ron Fenstermacher		Phone: +1 808 748 5840	E-Mail: Rachelle.Arada@eurofins.com	Page: Page 2 of 2										
Company: City & County of Honolulu		PWSID:	State of Origin:	Job #:										
Address: 630 South Beretana Street, Chemistry Lab		Due Date Requested:	Analysis Requested											
City: Honolulu		TAT Requested (days):	 380-112437 COC											
State, ZIP: HI 96843		Compliance Project: A No	Preservation Codes: A HCL M Hexane B NaOH N None C Zn Acetate O AshNaO2 D Nitric Acid P Na2O4S E NH4SC4 Q Na2SO3 F MeOH R Na2S2O3 G Amchlor S H2SO4 H Ascorbic Acid T TSP Dodecahydrate I Ice U Acetone J Di Water V MCAA K EDTA W pH 4-5 L EDA Y Trizma Z other (specify)											
Phone: 808-748-5091 (tel)		PO #: C20525101 exp 05312023	Total Number of containers: <input checked="" type="checkbox"/>											
Email: rfenstermacher@hbws.org		WO #:	Special Instructions/Note: chlorinated chlorinated											
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111	533 All Analytes 537 1 DM.PREC 525 2.PREC (MOD) 525plus PLUS TICs 80158_DRO_LL_CS HNL Ranges C10-C24/C24 C98/C8. 80158_GRO_LL (MOD) GRO SUBCONTRACT 825 PAH Physis LL (EAL) + TICs											
Site:		SSOW#:	Field Filled Sample (Yes or No) <input checked="" type="checkbox"/>											
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Matrix (W=water, S=solid, O=on-site)	Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/>	Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/>	R	A	Q	OA	Y	I	533 All Analytes
HALAWA WELLS UNITS 1&2 P1	9-Sep-2024	1006	G		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
AIEA GULCH WELLS PUMP 2	9-Sep-2024	1037	G		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
AIEA WELLS PUMPS 1&2 (260) P2	9-Sep-2024	1101	G		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
K'A'AMILO WELLS	9 Sep-2024	1128	G		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
FB K'A'AMILO WELLS	9-Sep-2024	1128												
FB HALAWA WELLS UNITS 1&2 P1	9-Sep-2024	1006												
FB AIEA GULCH WELLS PUMP 2	9-Sep-2024	1037												
FB AIEA WELLS PUMPS 1&2 (260) P2	9 Sep-2024	1101												
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months										
Deliverable Requested I II III IV Other (specify)		Special Instructions/OC Requirements		Method of Shipment										
Empty Kit Relinquished by	Date	Time	Received by											
	08 SEP 2024	1400	Received by:  Date/Time: 9/11/24 10:09 Company: HBWS											
Relinquished by	Date/Time	Company	Received by											
		Company	Received by:  Date/Time: 9/11/24 10:09 Company: HBWS											
Custody Seals Intact	Custody Seal No		Cooler Temperature(s) °C and Other Remarks											
<input type="checkbox"/> Yes <input type="checkbox"/> No			6/11/24 4.4 - 0.2 = 4.2 GET											



# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-112437-1

**Login Number: 112437**

**List Number: 1**

**Creator: Do, Michelle**

**List Source: Eurofins Eaton Analytical Pomona**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
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	