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# 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 10/16/2024 9:20:34 AM

## JOB DESCRIPTION

RED-HILL  
Weekly PFAS  
RUSH Weekly Red Hill

## JOB NUMBER

380-117392-1

# Eurofins Eaton Analytical Pomona

## Job Notes

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

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

## Compliance Statement

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

## Authorization



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Authorized for release by  
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# Definitions/Glossary

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

## Qualifiers

### LCMS

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

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	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: 380-117392-1

**Job ID: 380-117392-1**

**Eurofins Eaton Analytical Pomona**

## Job Narrative 380-117392-1

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 10/11/2024 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.7°C and 3.9°C.

### PFAS

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: 380-117392-1  
SDG: Weekly PFAS

**Client Sample ID: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**  
PWSID Number: HI0000331

**Lab Sample ID: 380-117392-1**

No Detections.

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

**Lab Sample ID: 380-117392-2**

No Detections.

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-117392-3**

No Detections.

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

**Lab Sample ID: 380-117392-4**

No Detections.

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This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

**Client Sample ID: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-117392-1**

**Date Collected: 10/09/24 09:40**

**Matrix: Drinking Water**

**Date Received: 10/11/24 10:00**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:45	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	98		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C6 PFDA	111		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C5 PFHxA	108		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C4 PFHpA	106		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C8 PFOA	108		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C9 PFNA	108		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C7 PFUnA	114		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C2 PFDoA	115		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C4 PFBA	111		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C5 PFPeA	106		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C3 PFBS	100		50 - 200			10/12/24 12:00	10/13/24 22:45	1
13C3 PFHxS	101		50 - 200			10/12/24 12:00	10/13/24 22:45	1

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# Client Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

**Client Sample ID: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-117392-1**

Date Collected: 10/09/24 09:40

Matrix: Drinking Water

Date Received: 10/11/24 10:00

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	103		50 - 200	10/12/24 12:00	10/13/24 22:45	1
13C2-4:2-FTS	109		50 - 200	10/12/24 12:00	10/13/24 22:45	1
13C2-6:2-FTS	108		50 - 200	10/12/24 12:00	10/13/24 22:45	1
13C2-8:2-FTS	113		50 - 200	10/12/24 12:00	10/13/24 22:45	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		10/14/24 11:45	10/15/24 12:15	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	116		70 - 130	10/14/24 11:45	10/15/24 12:15	1
13C2 PFHxA	124		70 - 130	10/14/24 11:45	10/15/24 12:15	1
13C2 PFDA	124		70 - 130	10/14/24 11:45	10/15/24 12:15	1
13C3-GenX	116		70 - 130	10/14/24 11:45	10/15/24 12:15	1

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

**Lab Sample ID: 380-117392-2**

Date Collected: 10/09/24 10:10

Matrix: Drinking Water

Date Received: 10/11/24 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1

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# Client Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-117392-2**

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

**Matrix: Drinking Water**

**Date Received: 10/11/24 10:00**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 22:55	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	101		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C6 PFDA	117		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C5 PFHxA	104		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C4 PFHpA	110		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C8 PFOA	108		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C9 PFNA	112		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C7 PFUnA	114		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C2 PFDoA	116		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C4 PFBA	108		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C5 PFPeA	107		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C3 PFBS	104		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C3 PFHxS	108		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C8 PFOS	106		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C2-4:2-FTS	122		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C2-6:2-FTS	111		50 - 200	10/12/24 12:00	10/13/24 22:55	1
13C2-8:2-FTS	119		50 - 200	10/12/24 12:00	10/13/24 22:55	1

# Client Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-117392-2**

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

**Matrix: Drinking Water**

**Date Received: 10/11/24 10:00**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:25	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	116		70 - 130			10/14/24 11:45	10/15/24 12:25	1
13C2 PFHxA	115		70 - 130			10/14/24 11:45	10/15/24 12:25	1
13C2 PFDA	116		70 - 130			10/14/24 11:45	10/15/24 12:25	1
13C3-GenX	113		70 - 130			10/14/24 11:45	10/15/24 12:25	1

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2**  
**(331-202-TP072)**

**Lab Sample ID: 380-117392-3**

**Date Collected: 10/09/24 09:40**

**Matrix: Water**

**Date Received: 10/11/24 10:00**

**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		10/12/24 12:00	10/13/24 23:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1

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# Client Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-117392-3**

Date Collected: 10/09/24 09:40

Matrix: Water

Date Received: 10/11/24 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:04	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C6 PFDA	111		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C5 PFHxA	103		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C4 PFHpA	104		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C8 PFOA	105		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C9 PFNA	107		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C7 PFUnA	110		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C2 PFDoA	115		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C4 PFBA	111		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C5 PFPeA	112		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C3 PFBS	104		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C3 PFHxS	108		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C8 PFOS	107		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C2-4:2-FTS	112		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C2-6:2-FTS	114		50 - 200			10/12/24 12:00	10/13/24 23:04	1
13C2-8:2-FTS	114		50 - 200			10/12/24 12:00	10/13/24 23:04	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		10/14/24 11:45	10/15/24 12:35	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1

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# Client Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-117392-3**

**Date Collected: 10/09/24 09:40**

**Matrix: Water**

**Date Received: 10/11/24 10:00**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:35	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	126		70 - 130			10/14/24 11:45	10/15/24 12:35	1
13C2 PFHxA	117		70 - 130			10/14/24 11:45	10/15/24 12:35	1
13C2 PFDA	117		70 - 130			10/14/24 11:45	10/15/24 12:35	1
13C3-GenX	115		70 - 130			10/14/24 11:45	10/15/24 12:35	1

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

**Lab Sample ID: 380-117392-4**

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

**Matrix: Water**

**Date Received: 10/11/24 10:00**

**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		10/12/24 12:00	10/13/24 23:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1

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# Client Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-117392-4**

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

**Matrix: Water**

**Date Received: 10/11/24 10:00**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/12/24 12:00	10/13/24 23:14	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C6 PFDA	112		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C5 PFHxA	104		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C4 PFHpA	106		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C8 PFOA	106		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C9 PFNA	107		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C7 PFUnA	112		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C2 PFDoA	111		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C4 PFBA	112		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C5 PFPeA	110		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C3 PFBS	107		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C3 PFHxS	109		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C8 PFOS	106		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C2-4:2-FTS	119		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C2-6:2-FTS	113		50 - 200	10/12/24 12:00	10/13/24 23:14	1
13C2-8:2-FTS	119		50 - 200	10/12/24 12:00	10/13/24 23:14	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		10/14/24 11:45	10/15/24 12:44	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1

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# Client Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-117392-4**

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

**Matrix: Water**

**Date Received: 10/11/24 10:00**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/14/24 11:45	10/15/24 12:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	123		70 - 130			10/14/24 11:45	10/15/24 12:44	1
13C2 PFHxA	122		70 - 130			10/14/24 11:45	10/15/24 12:44	1
13C2 PFDA	121		70 - 130			10/14/24 11:45	10/15/24 12:44	1
13C3-GenX	112		70 - 130			10/14/24 11:45	10/15/24 12:44	1

# Action Limit Summary

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

**Client Sample ID: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**  
PWSID Number: HI0000331

**Lab Sample ID: 380-117392-1**

## 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 Limit	RL	Method	Prep Type
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)  
(331-203-TP400)**  
PWSID Number: HI0000331

**Lab Sample ID: 380-117392-2**

## 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 Limit	RL	Method	Prep Type
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  
(331-202-TP072)**

**Lab Sample ID: 380-117392-3**

## 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 Limit	RL	Method	Prep Type
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

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# Action Limit Summary

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2  
(331-202-TP072) (Continued)**

**Lab Sample ID: 380-117392-3**

## 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			
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)  
(331-203-TP400)**

**Lab Sample ID: 380-117392-4**

## Compliance Check

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

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



# Surrogate Summary

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

Job ID: 380-117392-1  
 SDG: Weekly PFAS

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-117392-1	AIEA GULCH WELLS PUMP 2 (	116	124	124	116
380-117392-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	116	115	116	113

**Surrogate Legend**

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-117391-B-1-A MS	Matrix Spike	115	124	124	114
380-117391-C-1-A MSD	Matrix Spike Duplicate	115	118	116	110
380-117392-3	FB: AIEA GULCH WELLS PUMF 2 (331-202-TP072)	126	117	117	115
380-117392-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	123	122	121	112
LCS 380-113334/22-A	Lab Control Sample	115	113	110	108
MBL 380-113334/20-A	Method Blank	121	111	119	106
MRL 380-113334/21-A	Lab Control Sample	127	116	123	114

**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: 380-117392-1  
SDG: Weekly PFAS

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

Matrix: Drinking Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-117392-1	AIEA GULCH WELLS PUMP 2 (	98	111	108	106	108	108	114	115
380-117392-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	101	117	104	110	108	112	114	116

		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)
380-117392-1	AIEA GULCH WELLS PUMP 2 (	111	106	100	101	103	109	108	113
380-117392-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	108	107	104	108	106	122	111	119

### Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-117391-H-1-A MS	Matrix Spike	98	108	100	102	103	109	111	114
380-117391-I-1-A MSD	Matrix Spike Duplicate	73	97	74	79	84	92	101	110
380-117392-3	FB: AIEA GULCH WELLS PUMF 2 (331-202-TP072)	91	111	103	104	105	107	110	115
380-117392-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	93	112	104	106	106	107	112	111
LCS 380-113217/22-A	Lab Control Sample	97	111	103	103	105	109	112	111
MBL 380-113217/20-A	Method Blank	97	113	101	107	107	109	113	110
MRL 380-113217/21-A	Lab Control Sample	87	112	98	101	106	107	112	109

		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)
380-117391-H-1-A MS	Matrix Spike	105	111	103	105	105	109	109	116
380-117391-I-1-A MSD	Matrix Spike Duplicate	79	76	99	103	103	107	105	113
380-117392-3	FB: AIEA GULCH WELLS PUMF 2 (331-202-TP072)	111	112	104	108	107	112	114	114

# Isotope Dilution Summary

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

Job ID: 380-117392-1  
 SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

**Percent Isotope Dilution Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-117392-4	FB: AIEA WELLS PUMPS 1&2 (	112	110	107	109	106	119	113	119
LCS 380-113217/22-A	Lab Control Sample	109	101	100	105	103	110	110	114
MBL 380-113217/20-A	Method Blank	110	107	102	104	106	112	116	121
MRL 380-113217/21-A	Lab Control Sample	109	109	101	103	105	123	116	119

**Surrogate Legend**

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



# QC Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MBL 380-113217/20-A**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		10/12/24 12:00	10/13/24 19:37	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C6 PFDA	113		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C5 PFHxA	101		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C4 PFHpA	107		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C8 PFOA	107		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C9 PFNA	109		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C7 PFUnA	113		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C2 PFDoA	110		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C4 PFBA	110		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C5 PFPeA	107		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C3 PFBS	102		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C3 PFHxS	104		50 - 200	10/12/24 12:00	10/13/24 19:37	1

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# QC Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MBL 380-113217/20-A**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	106		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C2-4:2-FTS	112		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C2-6:2-FTS	116		50 - 200	10/12/24 12:00	10/13/24 19:37	1
13C2-8:2-FTS	121		50 - 200	10/12/24 12:00	10/13/24 19:37	1

**Lab Sample ID: LCS 380-113217/22-A**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	59.9	59.4		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	59.9	60.9		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	59.9	61.5		ng/L		103	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.9	62.0		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.9	62.4		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	59.9	61.1		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	59.9	61.3		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.9	64.3		ng/L		107	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.9	60.3		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	59.9	61.1		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	59.9	60.4		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.9	61.0		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	59.9	63.5		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	59.9	59.8		ng/L		100	70 - 130
Perfluorobutanoic acid (PFBA)	59.9	60.1		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.9	64.8		ng/L		108	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.9	59.3		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.9	61.4		ng/L		103	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	59.9	57.8		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	59.9	62.6		ng/L		105	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.9	61.2		ng/L		102	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.9	63.1		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	59.9	64.2		ng/L		107	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.9	60.4		ng/L		101	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: LCS 380-113217/22-A**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	59.9	59.0		ng/L		99	70 - 130
<b>LCS LCS</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
13C3 HFPO-DA	97		50 - 200				
13C6 PFDA	111		50 - 200				
13C5 PFHxA	103		50 - 200				
13C4 PFHpA	103		50 - 200				
13C8 PFOA	105		50 - 200				
13C9 PFNA	109		50 - 200				
13C7 PFUnA	112		50 - 200				
13C2 PFDoA	111		50 - 200				
13C4 PFBA	109		50 - 200				
13C5 PFPeA	101		50 - 200				
13C3 PFBS	100		50 - 200				
13C3 PFHxS	105		50 - 200				
13C8 PFOS	103		50 - 200				
13C2-4:2-FTS	110		50 - 200				
13C2-6:2-FTS	110		50 - 200				
13C2-8:2-FTS	114		50 - 200				

**Lab Sample ID: MRL 380-113217/21-A**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.97	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.05	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.13	J	ng/L		107	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.29	J	ng/L		115	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.01	J	ng/L		101	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.29	J	ng/L		115	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.23	J	ng/L		112	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MRL 380-113217/21-A**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.12	J	ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.14	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.19	J	ng/L		110	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.17	J	ng/L		109	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.17	J	ng/L		109	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.07	J	ng/L		104	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.09	J	ng/L		105	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.95	J	ng/L		98	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	87		50 - 200
13C6 PFDA	112		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	101		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	112		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	123		50 - 200
13C2-6:2-FTS	116		50 - 200
13C2-8:2-FTS	119		50 - 200

**Lab Sample ID: 380-117391-H-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	114		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	118		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	118		ng/L		98	70 - 130

# QC Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-117391-H-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	125		ng/L		104	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	121		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	121		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	115		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	120		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	112		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	124		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	116		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	118		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	126		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	119		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	122		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	120		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	117		ng/L		97	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		120	112		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	121		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	124		ng/L		103	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	114		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	118		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	118		ng/L		98	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	117		ng/L		97	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	98		50 - 200
13C6 PFDA	108		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	109		50 - 200
13C7 PFUnA	111		50 - 200
13C2 PFDoA	114		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	105		50 - 200
13C8 PFOS	105		50 - 200



# QC Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-117391-H-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	109		50 - 200
13C2-8:2-FTS	116		50 - 200

**Lab Sample ID: 380-117391-I-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 113255**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 113217**

<b>Analyte</b>	<b>Sample Result</b>	<b>Sample Qualifier</b>	<b>Spike Added</b>	<b>MSD Result</b>	<b>MSD Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	116		ng/L		96	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	114		ng/L		95	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	113		ng/L		94	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	119		ng/L		99	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	126		ng/L		105	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		120	121		ng/L		101	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	116		ng/L		96	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	123		ng/L		102	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	119		ng/L		98	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	121		ng/L		101	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		120	118		ng/L		98	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	118		ng/L		98	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		120	122		ng/L		101	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	120		ng/L		100	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		120	118		ng/L		98	70 - 130	4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	122		ng/L		101	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	115		ng/L		96	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	119		ng/L		99	70 - 130	2	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	111		ng/L		93	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	122		ng/L		101	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	117		ng/L		97	70 - 130	6	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	121		ng/L		100	70 - 130	6	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	121		ng/L		101	70 - 130	3	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	116		ng/L		97	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	114		ng/L		94	70 - 130	3	30

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	73		50 - 200
13C6 PFDA	97		50 - 200
13C5 PFHxA	74		50 - 200
13C4 PFHpA	79		50 - 200
13C8 PFOA	84		50 - 200
13C9 PFNA	92		50 - 200
13C7 PFUnA	101		50 - 200
13C2 PFDoA	110		50 - 200
13C4 PFBA	79		50 - 200
13C5 PFPeA	76		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	113		50 - 200

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

**Lab Sample ID: MBL 380-113334/20-A**  
**Matrix: Water**  
**Analysis Batch: 113527**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 113334**

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		10/14/24 11:45	10/15/24 09:07	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/14/24 11:45	10/15/24 09:07	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	121		70 - 130			10/14/24 11:45	10/15/24 09:07	1
13C2 PFHxA	111		70 - 130			10/14/24 11:45	10/15/24 09:07	1
13C2 PFDA	119		70 - 130			10/14/24 11:45	10/15/24 09:07	1

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MBL 380-113334/20-A**  
**Matrix: Water**  
**Analysis Batch: 113527**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 113334**

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	106		70 - 130	10/14/24 11:45	10/15/24 09:07	1

**Lab Sample ID: LCS 380-113334/22-A**  
**Matrix: Water**  
**Analysis Batch: 113527**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 113334**

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	45.8		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.1	52.0		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	53.2		ng/L		106	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	52.7		ng/L		105	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	50.9		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	48.5		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	51.1		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	51.6		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	49.9		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.1	51.5		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	46.9		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	50.7		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	50.1	51.9		ng/L		104	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	51.4		ng/L		103	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	49.7		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	50.1	49.0		ng/L		98	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	50.0		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	51.5		ng/L		103	70 - 130

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	115		70 - 130
13C2 PFHxA	113		70 - 130
13C2 PFDA	110		70 - 130
13C3-GenX	108		70 - 130

# QC Sample Results

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MRL 380-113334/21-A**  
**Matrix: Water**  
**Analysis Batch: 113527**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 113334**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.89	J	ng/L		95	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.25	J	ng/L		112	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.34	J	ng/L		117	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.29	J	ng/L		114	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.32	J	ng/L		116	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.23	J	ng/L		112	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.48	J	ng/L		124	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.19	J	ng/L		109	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.17	J	ng/L		108	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.06	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.20	J	ng/L		110	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	127		70 - 130
13C2 PFHxA	116		70 - 130
13C2 PFDA	123		70 - 130
13C3-GenX	114		70 - 130

**Lab Sample ID: 380-117391-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 113527**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 113334**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.3	51.3		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.3	52.6		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.3	56.8		ng/L		113	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.3	52.8		ng/L		105	70 - 130

Eurofins Eaton Analytical Pomona





# QC Association Summary

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

## LCMS

### Prep Batch: 113217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-117392-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	
380-117392-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	533	
380-117392-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	533	
380-117392-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	533	
MBL 380-113217/20-A	Method Blank	Total/NA	Water	533	
LCS 380-113217/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-113217/21-A	Lab Control Sample	Total/NA	Water	533	
380-117391-H-1-A MS	Matrix Spike	Total/NA	Water	533	
380-117391-I-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

### Analysis Batch: 113255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-117392-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	113217
380-117392-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	533	113217
380-117392-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	533	113217
380-117392-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	533	113217
MBL 380-113217/20-A	Method Blank	Total/NA	Water	533	113217
LCS 380-113217/22-A	Lab Control Sample	Total/NA	Water	533	113217
MRL 380-113217/21-A	Lab Control Sample	Total/NA	Water	533	113217
380-117391-H-1-A MS	Matrix Spike	Total/NA	Water	533	113217
380-117391-I-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	113217

### Prep Batch: 113334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-117392-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
380-117392-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	537.1 DW	
380-117392-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	537.1 DW	
380-117392-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1 DW	
MBL 380-113334/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-113334/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-113334/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-117391-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-117391-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Analysis Batch: 113527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-117392-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	113334
380-117392-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	537.1	113334
380-117392-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	537.1	113334
380-117392-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1	113334
MBL 380-113334/20-A	Method Blank	Total/NA	Water	537.1	113334
LCS 380-113334/22-A	Lab Control Sample	Total/NA	Water	537.1	113334
MRL 380-113334/21-A	Lab Control Sample	Total/NA	Water	537.1	113334
380-117391-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	113334
380-117391-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	113334



# Lab Chronicle

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

**Client Sample ID: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-117392-1**

Date Collected: 10/09/24 09:40

Matrix: Drinking Water

Date Received: 10/11/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			113217	N8NE	EA POM	10/12/24 12:00
Total/NA	Analysis	533		1	113255	SZ9R	EA POM	10/13/24 22:45
Total/NA	Prep	537.1 DW			113334	HM3M	EA POM	10/14/24 11:45
Total/NA	Analysis	537.1		1	113527	SZ9R	EA POM	10/15/24 12:15

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

**Lab Sample ID: 380-117392-2**

Date Collected: 10/09/24 10:10

Matrix: Drinking Water

Date Received: 10/11/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			113217	N8NE	EA POM	10/12/24 12:00
Total/NA	Analysis	533		1	113255	SZ9R	EA POM	10/13/24 22:55
Total/NA	Prep	537.1 DW			113334	HM3M	EA POM	10/14/24 11:45
Total/NA	Analysis	537.1		1	113527	SZ9R	EA POM	10/15/24 12:25

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-117392-3**

Date Collected: 10/09/24 09:40

Matrix: Water

Date Received: 10/11/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			113217	N8NE	EA POM	10/12/24 12:00
Total/NA	Analysis	533		1	113255	SZ9R	EA POM	10/13/24 23:04
Total/NA	Prep	537.1 DW			113334	HM3M	EA POM	10/14/24 11:45
Total/NA	Analysis	537.1		1	113527	SZ9R	EA POM	10/15/24 12:35

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

**Lab Sample ID: 380-117392-4**

Date Collected: 10/09/24 10:10

Matrix: Water

Date Received: 10/11/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			113217	N8NE	EA POM	10/12/24 12:00
Total/NA	Analysis	533		1	113255	SZ9R	EA POM	10/13/24 23:14
Total/NA	Prep	537.1 DW			113334	HM3M	EA POM	10/14/24 11:45
Total/NA	Analysis	537.1		1	113527	SZ9R	EA POM	10/15/24 12:44

**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: 380-117392-1  
SDG: Weekly PFAS

## Laboratory: Eurofins Eaton Analytical Pomona

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

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

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# Method Summary

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

Job ID: 380-117392-1  
SDG: Weekly PFAS

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100



# Sample Summary

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

Job ID: 380-117392-1  
SDG: Weekly PFAS


Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-117392-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	10/09/24 09:40	10/11/24 10:00	HI0000331
380-117392-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	10/09/24 10:10	10/11/24 10:00	HI0000331
380-117392-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	10/09/24 09:40	10/11/24 10:00	
380-117392-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	10/09/24 10:10	10/11/24 10:00	

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

# Chain of Custody Record



<b>Client Information</b> Client Contact: Dr Ron Fenstermacher Company: Fenstermacher City & County of Honolulu Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State, Zip: HI, 96843 Phone: 808-748-5091 (tel) Email: rfenstermacher@hbws.org Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site:		Lab PM: Arada, Rachelle E-Mail: Rachelle.Arada@eurofins.com Carrier Tracking No(s): 380-27941-2757.2 State of Origin:	
Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> No PO #: C20525101 exp 05312023 WFO #:		PWSID: Analysis Requested 180-117392 COC 	
Sample Identification Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (Water, Soil, Sewer, Oil, Other) Preservation Code: Sample Date: 9-Oct-2024 Sample Time: 0840 Sample Type: Water Matrix: Water Preservation Code:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs 80158_GRO_LL - (MOD) GRO 80158_DRO_LL_CS - HNL Ranges C10-C24/C24-C38/C8 C18 525.2_PREC - (MOD) 525plus PLUS TICs 537.1_DW_PREC - 537.1 Full List 533 - All Analytes	
AIEA GULCH WELLS PUMP 2 AIEA WELLS PUMPS 1&2 (260)		Total Number of Containers: <input checked="" type="checkbox"/>	
FB AIEA GULCH WELLS PUMP 2 FB AIEA WELLS PUMPS 1&2 (260)		Special Instructions/Note: chlorinated chlorinated	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological			
Deliverable Requested 1, II, III, IV, Other (specify)			
Empty Kit Relinquished by:			
Reinquished: [Redacted] Date/Time: 10-8-24 1100 Company: HBWS		Date/Time: 10/11/2024 10:00 Company:	
Reinquished by: [Redacted] Date/Time:		Received by: G. RETNER Date/Time:	
Reinquished by:		Received by:	
Custody Seal No.: <input type="checkbox"/> Yes <input type="checkbox"/> No		Method of Shipment: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other ① 7791 6532 0345 ② 7791 6532 0356	
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		Special Instructions/QC Requirements:	
Customer Seal No.: 3.7°-0.0°=3.9° ② 3.7°-0.0°=3.7° 0EL-FROZEN (751A) 3.9°-0.0°=3.9°			



# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-117392-1  
SDG Number: Weekly PFAS

**Login Number: 117392**  
**List Number: 1**  
**Creator: Gerfen, Chris**

**List Source: Eurofins Eaton Analytical Pomona**

Question	Answer	Comment
The coolers custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

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