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# ANALYTICAL REPORT

## PREPARED FOR

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## JOB DESCRIPTION

RED-HILL  
PFAS: Halawa Wells Unit 1&2 P1

## JOB NUMBER

380-192810-1

# Eurofins Pomona

## Job Notes

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

## Compliance Statement

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

## Authorization



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# Definitions/Glossary

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

## 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: 380-192810-1

**Job ID: 380-192810-1**

**Eurofins Pomona**

## Job Narrative 380-192810-1

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

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

### Receipt

The samples were received on 1/15/2026 9:38 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 3.8°C.

### PFAS

EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results: Halawa Wells Unit 1 & 2 P1 (3880-192810-1). (XWB4)

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

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# Detection Summary

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

Lab Sample ID: 380-192810-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	ng/L	1		537.1	Total/NA

## Client Sample ID: HALAWA WELLS UNIT 1 & 2 P1 Blank

Lab Sample ID: 380-192810-2

No Detections.

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: 380-192810-1**

Date Collected: 01/13/26 12:00

Matrix: Drinking Water

Date Received: 01/15/26 09:38

**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		01/16/26 16:55	01/17/26 14:46	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.6</b>		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.4</b>		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
<b>Perfluoropentanoic acid (PFPeA)</b>	<b>2.0</b>		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:46	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	83		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C6 PFDA	105		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C5 PFHxA	103		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C4 PFHpA	106		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C8 PFOA	108		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C9 PFNA	107		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C7 PFUnA	101		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C2 PFDoA	106		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C4 PFBA	101		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C5 PFPeA	102		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C3 PFBS	104		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C3 PFHxS	100		50 - 200	01/16/26 16:55	01/17/26 14:46	1

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# Client Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: 380-192810-1**

Date Collected: 01/13/26 12:00

Matrix: Drinking Water

Date Received: 01/15/26 09:38

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	104		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C2-4:2-FTS	126		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C2-6:2-FTS	125		50 - 200	01/16/26 16:55	01/17/26 14:46	1
13C2-8:2-FTS	120		50 - 200	01/16/26 16:55	01/17/26 14:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.6</b>		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>2.0</b>		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.7</b>		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:28	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	108		70 - 130			01/18/26 08:36	01/19/26 16:28	1
13C2 PFHxA	115		70 - 130			01/18/26 08:36	01/19/26 16:28	1
13C2 PFDA	111		70 - 130			01/18/26 08:36	01/19/26 16:28	1
13C3-GenX	110		70 - 130			01/18/26 08:36	01/19/26 16:28	1

**Client Sample ID: HALAWA WELLS UNIT 1 & 2 P1 Blank**

**Lab Sample ID: 380-192810-2**

Date Collected: 01/13/26 12:00

Matrix: Drinking Water

Date Received: 01/15/26 09:38

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1

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# Client Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

**Client Sample ID: HALAWA WELLS UNIT 1 & 2 P1 Blank**

**Lab Sample ID: 380-192810-2**

Date Collected: 01/13/26 12:00

Matrix: Drinking Water

Date Received: 01/15/26 09:38

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/16/26 16:55	01/17/26 14:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C6 PFDA	103		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C5 PFHxA	101		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C4 PFHpA	105		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C8 PFOA	105		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C9 PFNA	104		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C7 PFUnA	99		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C2 PFDoA	102		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C4 PFBA	103		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C5 PFPeA	106		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C3 PFBS	103		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C3 PFHxS	101		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C8 PFOS	103		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C2-4:2-FTS	129		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C2-6:2-FTS	122		50 - 200	01/16/26 16:55	01/17/26 14:56	1
13C2-8:2-FTS	119		50 - 200	01/16/26 16:55	01/17/26 14:56	1

# Client Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

**Client Sample ID: HALAWA WELLS UNIT 1 & 2 P1 Blank**

**Lab Sample ID: 380-192810-2**

Date Collected: 01/13/26 12:00

Matrix: Drinking Water

Date Received: 01/15/26 09:38

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 16:19	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	108		70 - 130			01/18/26 08:36	01/19/26 16:19	1
13C2 PFHxA	122		70 - 130			01/18/26 08:36	01/19/26 16:19	1
13C2 PFDA	115		70 - 130			01/18/26 08:36	01/19/26 16:19	1
13C3-GenX	113		70 - 130			01/18/26 08:36	01/19/26 16:19	1

# Action Limit Summary

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: 380-192810-1**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		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: HALAWA WELLS UNIT 1 & 2 P1 Blank**

**Lab Sample ID: 380-192810-2**

## Compliance Check

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

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

# Surrogate Summary

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

Job ID: 380-192810-1  
 SDG: PFAS: Halawa Wells Unit 1&2 P1

## 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)
380-192810-1	HALAWA WELLS UNIT 1 & 2 P1	108	115	111	110
380-192810-2	HALAWA WELLS UNIT 1 & 2 P1	108	122	115	113
	Blank				

**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)
380-192534-B-1-A MS	Matrix Spike	109	110	108	104
380-192534-C-1-A MSD	Matrix Spike Duplicate	106	111	111	106
LCS 380-198726/23-A	Lab Control Sample	94	104	108	90
MBL 380-198726/21-A	Method Blank	102	106	113	94
MRL 380-198726/22-A	Lab Control Sample	102	102	117	90

**Surrogate Legend**

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

# Isotope Dilution Summary

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

## 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)
380-192810-1	HALAWA WELLS UNIT 1 & 2 P1	83	105	103	106	108	107	101	106
380-192810-2	HALAWA WELLS UNIT 1 & 2 P1 Blank	79	103	101	105	105	104	99	102

### 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)
380-192810-1	HALAWA WELLS UNIT 1 & 2 P1	101	102	104	100	104	126	125	120
380-192810-2	HALAWA WELLS UNIT 1 & 2 P1 Blank	103	106	103	101	103	129	122	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)
380-192323-D-1-A MS	Matrix Spike	94	106	103	103	103	103	102	107
380-192323-E-1-A MSD	Matrix Spike Duplicate	90	105	104	106	105	104	101	107
LCS 380-198605/22-A	Lab Control Sample	84	109	106	104	104	106	105	110
MBL 380-198605/20-A	Method Blank	82	103	102	106	107	105	101	104
MRL 380-198605/21-A	Lab Control Sample	83	107	112	115	107	110	107	110

### 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)
380-192323-D-1-A MS	Matrix Spike	102	117	107	101	104	126	125	114
380-192323-E-1-A MSD	Matrix Spike Duplicate	101	115	106	100	101	124	118	117
LCS 380-198605/22-A	Lab Control Sample	104	104	113	100	105	116	110	115
MBL 380-198605/20-A	Method Blank	106	107	107	102	105	132	123	116
MRL 380-198605/21-A	Lab Control Sample	106	104	112	106	108	128	122	118

#### Surrogate Legend

HFPODA = 13C3 HFPO-DA  
C6PFDA = 13C6 PFDA

# Isotope Dilution Summary

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

- 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: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: MBL 380-198605/20-A**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

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		01/16/26 16:55	01/17/26 13:20	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		01/16/26 16:55	01/17/26 13:20	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C6 PFDA	103		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C5 PFHxA	102		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C4 PFHpA	106		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C8 PFOA	107		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C9 PFNA	105		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C7 PFUnA	101		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C2 PFDoA	104		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C4 PFBA	106		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C5 PFPeA	107		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C3 PFBS	107		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C3 PFHxS	102		50 - 200	01/16/26 16:55	01/17/26 13:20	1

Eurofins Pomona

# QC Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: MBL 380-198605/20-A**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	105		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C2-4:2-FTS	132		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C2-6:2-FTS	123		50 - 200	01/16/26 16:55	01/17/26 13:20	1
13C2-8:2-FTS	116		50 - 200	01/16/26 16:55	01/17/26 13:20	1

**Lab Sample ID: LCS 380-198605/22-A**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

<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)	121	112		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	121	116		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	121	128		ng/L		106	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	121	120		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	121	113		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	121	118		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	121	121		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	121	119		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	121	122		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	121	123		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	121	123		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	121	126		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	121	122		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	121	134		ng/L		111	70 - 130
Perfluorobutanoic acid (PFBA)	121	120		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	121	122		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	121	117		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	121	125		ng/L		103	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	121	100		ng/L		83	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	121	110		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	121	117		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	121	116		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	121	115		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	121	121		ng/L		100	70 - 130

# QC Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: LCS 380-198605/22-A**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	121	122		ng/L		101	70 - 130
<b>LCS LCS</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
13C3 HFPO-DA	84		50 - 200				
13C6 PFDA	109		50 - 200				
13C5 PFHxA	106		50 - 200				
13C4 PFHpA	104		50 - 200				
13C8 PFOA	104		50 - 200				
13C9 PFNA	106		50 - 200				
13C7 PFUnA	105		50 - 200				
13C2 PFDoA	110		50 - 200				
13C4 PFBA	104		50 - 200				
13C5 PFPeA	104		50 - 200				
13C3 PFBS	113		50 - 200				
13C3 PFHxS	100		50 - 200				
13C8 PFOS	105		50 - 200				
13C2-4:2-FTS	116		50 - 200				
13C2-6:2-FTS	110		50 - 200				
13C2-8:2-FTS	115		50 - 200				

**Lab Sample ID: MRL 380-198605/21-A**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.01	J	ng/L		100	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.07	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.16	J	ng/L		107	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.10	J	ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.26	J	ng/L		112	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.24	J	ng/L		111	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.22	J	ng/L		110	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.16	J	ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.28	J	ng/L		113	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.27	J	ng/L		113	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.27	J	ng/L		113	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.48	J	ng/L		123	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.12	J	ng/L		105	50 - 150

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# QC Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: MRL 380-198605/21-A**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.35	J	ng/L		117	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.31	J	ng/L		115	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.39	J	ng/L		119	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	1.90	J	ng/L		94	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.12	J	ng/L		105	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.16	J	ng/L		107	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.30	J	ng/L		114	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.07	J	ng/L		103	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	83		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	112		50 - 200
13C4 PFHpA	115		50 - 200
13C8 PFOA	107		50 - 200
13C9 PFNA	110		50 - 200
13C7 PFUnA	107		50 - 200
13C2 PFDoA	110		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	112		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	128		50 - 200
13C2-6:2-FTS	122		50 - 200
13C2-8:2-FTS	118		50 - 200

**Lab Sample ID: 380-192323-D-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	55.4		ng/L		92	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	58.8		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	62.7		ng/L		104	70 - 130

# QC Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: 380-192323-D-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.2	58.2		ng/L		97	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	60.7		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	60.7		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	60.2		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	62.5		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	61.6		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	60.9		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	65.3		ng/L		108	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	62.2		ng/L		103	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	62.5		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	68.3		ng/L		113	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	63.8		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	63.0		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	60.1		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	62.2		ng/L		103	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	57.5		ng/L		95	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	62.8		ng/L		104	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	67.1		ng/L		111	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	63.0		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	60.3		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	59.8		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	59.8		ng/L		99	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	94		50 - 200
13C6 PFDA	106		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	103		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	103		50 - 200
13C7 PFUnA	102		50 - 200
13C2 PFDoA	107		50 - 200
13C4 PFBA	102		50 - 200
13C5 PFPeA	117		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	104		50 - 200

# QC Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: 380-192323-D-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	126		50 - 200
13C2-6:2-FTS	125		50 - 200
13C2-8:2-FTS	114		50 - 200

**Lab Sample ID: 380-192323-E-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 198707**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 198605**

<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		60.4	57.9		ng/L		96	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	60.5		ng/L		100	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	59.8		ng/L		99	70 - 130	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	60.6		ng/L		100	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	57.6		ng/L		95	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		60.4	62.6		ng/L		104	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	60.9		ng/L		101	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	60.5		ng/L		100	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	61.6		ng/L		102	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	63.2		ng/L		105	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		60.4	62.7		ng/L		104	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	63.2		ng/L		105	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		60.4	61.6		ng/L		102	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	68.2		ng/L		113	70 - 130	0	30
Perfluorobutanoic acid (PFBA)	<2.0		60.4	62.9		ng/L		103	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	59.4		ng/L		98	70 - 130	6	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	60.8		ng/L		101	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	62.1		ng/L		103	70 - 130	0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	50.4		ng/L		84	70 - 130	13	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	62.0		ng/L		103	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	69.0		ng/L		114	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	62.8		ng/L		104	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	62.7		ng/L		104	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	62.7		ng/L		104	70 - 130	5	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	61.2		ng/L		101	70 - 130	2	30

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# QC Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	90		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	104		50 - 200
13C4 PFHpA	106		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	101		50 - 200
13C2 PFDoA	107		50 - 200
13C4 PFBA	101		50 - 200
13C5 PFPeA	115		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	124		50 - 200
13C2-6:2-FTS	118		50 - 200
13C2-8:2-FTS	117		50 - 200

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

**Lab Sample ID: MBL 380-198726/21-A**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	102		70 - 130			01/18/26 08:36	01/19/26 12:41	1
13C2 PFHxA	106		70 - 130			01/18/26 08:36	01/19/26 12:41	1
13C2 PFDA	113		70 - 130			01/18/26 08:36	01/19/26 12:41	1

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# QC Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: MBL 380-198726/21-A**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	94	Qualifier	70 - 130	01/18/26 08:36	01/19/26 12:41	1

**Lab Sample ID: LCS 380-198726/23-A**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

<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)	25.1	21.7		ng/L		86		70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	26.7		ng/L		106		70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	26.3		ng/L		105		70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	22.8		ng/L		91		70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	23.1		ng/L		92		70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	23.6		ng/L		94		70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	25.9		ng/L		103		70 - 130
Perfluorooctanoic acid (PFOA)	25.1	25.9		ng/L		103		70 - 130
Perfluorodecanoic acid (PFDA)	25.1	26.8		ng/L		107		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	26.9		ng/L		107		70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	27.0		ng/L		107		70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	24.8		ng/L		99		70 - 130
Perfluorononanoic acid (PFNA)	25.1	26.8		ng/L		107		70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	24.3		ng/L		97		70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	27.6		ng/L		110		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	25.1	27.1		ng/L		108		70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	25.9		ng/L		103		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	24.2		ng/L		96		70 - 130

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
d5-NEtFOSAA	94		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	108		70 - 130
13C3-GenX	90		70 - 130

# QC Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: MRL 380-198726/22-A**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.69	J	ng/L		84	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.14	J	ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.20	J	ng/L		109	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	1.82	J	ng/L		91	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.87	J	ng/L		93	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.20	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.87	J	ng/L		93	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	1.65	J	ng/L		82	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.05	J	ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.01	2.16	J	ng/L		107	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.96	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.97	J	ng/L		98	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	102		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	117		70 - 130
13C3-GenX	90		70 - 130

**Lab Sample ID: 380-192534-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

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	46.3		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	51.5		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	50.7		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	50.0		ng/L		100	70 - 130

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# QC Sample Results

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Lab Sample ID: 380-192534-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec	
				Result	Qualifier				Limits	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	50.5		ng/L		101	70 - 130	
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	48.0		ng/L		96	70 - 130	
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	50.2		ng/L		100	70 - 130	
Perfluorooctanoic acid (PFOA)	<2.0		50.2	51.1		ng/L		102	70 - 130	
Perfluorodecanoic acid (PFDA)	<2.0		50.2	51.3		ng/L		102	70 - 130	
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	50.4		ng/L		100	70 - 130	
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	52.4		ng/L		104	70 - 130	
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	49.8		ng/L		99	70 - 130	
Perfluorononanoic acid (PFNA)	<2.0		50.2	51.9		ng/L		103	70 - 130	
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	47.3		ng/L		94	70 - 130	
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	52.4		ng/L		104	70 - 130	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	51.1		ng/L		102	70 - 130	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	55.4		ng/L		110	70 - 130	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	48.9		ng/L		97	70 - 130	
<b>MS MS</b>										
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
d5-NEtFOSAA		109		70 - 130						
13C2 PFHxA		110		70 - 130						
13C2 PFDA		108		70 - 130						
13C3-GenX		104		70 - 130						

**Lab Sample ID: 380-192534-C-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	
				Result	Qualifier				Limits		RPD	Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	45.3		ng/L		90	70 - 130		2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	49.9		ng/L		99	70 - 130		3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	49.7		ng/L		99	70 - 130		2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	48.4		ng/L		96	70 - 130		3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	48.7		ng/L		97	70 - 130		4	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	46.8		ng/L		93	70 - 130		3	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	51.3		ng/L		102	70 - 130		2	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	51.3		ng/L		102	70 - 130		0	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	50.5		ng/L		101	70 - 130		2	30

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# QC Association Summary

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

## LCMS

### Prep Batch: 198605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-192810-1	HALAWA WELLS UNIT 1 & 2 P1	Total/NA	Drinking Water	533	
380-192810-2	HALAWA WELLS UNIT 1 & 2 P1 Blank	Total/NA	Drinking Water	533	
MBL 380-198605/20-A	Method Blank	Total/NA	Water	533	
LCS 380-198605/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-198605/21-A	Lab Control Sample	Total/NA	Water	533	
380-192323-D-1-A MS	Matrix Spike	Total/NA	Water	533	
380-192323-E-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

### Analysis Batch: 198707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-192810-1	HALAWA WELLS UNIT 1 & 2 P1	Total/NA	Drinking Water	533	198605
380-192810-2	HALAWA WELLS UNIT 1 & 2 P1 Blank	Total/NA	Drinking Water	533	198605
MBL 380-198605/20-A	Method Blank	Total/NA	Water	533	198605
LCS 380-198605/22-A	Lab Control Sample	Total/NA	Water	533	198605
MRL 380-198605/21-A	Lab Control Sample	Total/NA	Water	533	198605
380-192323-D-1-A MS	Matrix Spike	Total/NA	Water	533	198605
380-192323-E-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	198605

### Prep Batch: 198726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-192810-1	HALAWA WELLS UNIT 1 & 2 P1	Total/NA	Drinking Water	537.1 DW	
380-192810-2	HALAWA WELLS UNIT 1 & 2 P1 Blank	Total/NA	Drinking Water	537.1 DW	
MBL 380-198726/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-198726/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-198726/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-192534-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-192534-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Analysis Batch: 198979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-192810-1	HALAWA WELLS UNIT 1 & 2 P1	Total/NA	Drinking Water	537.1	198726
380-192810-2	HALAWA WELLS UNIT 1 & 2 P1 Blank	Total/NA	Drinking Water	537.1	198726
MBL 380-198726/21-A	Method Blank	Total/NA	Water	537.1	198726
LCS 380-198726/23-A	Lab Control Sample	Total/NA	Water	537.1	198726
MRL 380-198726/22-A	Lab Control Sample	Total/NA	Water	537.1	198726
380-192534-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	198726
380-192534-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	198726

# Lab Chronicle

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

Lab Sample ID: 380-192810-1

Date Collected: 01/13/26 12:00

Matrix: Drinking Water

Date Received: 01/15/26 09:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			198605	N8NE	EA POM	01/16/26 16:55
Total/NA	Analysis	533		1	198707	M7ML	EA POM	01/17/26 14:46
Total/NA	Prep	537.1 DW			198726	E9PK	EA POM	01/18/26 08:36
Total/NA	Analysis	537.1		1	198979	M7ML	EA POM	01/19/26 16:28

## Client Sample ID: HALAWA WELLS UNIT 1 & 2 P1 Blank

Lab Sample ID: 380-192810-2

Date Collected: 01/13/26 12:00

Matrix: Drinking Water

Date Received: 01/15/26 09:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			198605	N8NE	EA POM	01/16/26 16:55
Total/NA	Analysis	533		1	198707	M7ML	EA POM	01/17/26 14:56
Total/NA	Prep	537.1 DW			198726	E9PK	EA POM	01/18/26 08:36
Total/NA	Analysis	537.1		1	198979	M7ML	EA POM	01/19/26 16:19

### Laboratory References:

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

# Accreditation/Certification Summary

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

## Laboratory: Eurofins Pomona

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

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

- 1
- 2
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# Method Summary

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

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

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

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



# Sample Summary

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

Job ID: 380-192810-1  
SDG: PFAS: Halawa Wells Unit 1&2 P1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-192810-1	HALAWA WELLS UNIT 1 & 2 P1	Drinking Water	01/13/26 12:00	01/15/26 09:38	Hawaii
380-192810-2	HALAWA WELLS UNIT 1 & 2 P1 Blank	Drinking Water	01/13/26 12:00	01/15/26 09:38	Hawaii

- 1
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- 17



## Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-192810-1  
SDG Number: PFAS: Halawa Wells Unit 1&2 P1

**Login Number: 192810**  
**List Number: 1**  
**Creator: Ngo, Theodore**

**List Source: Eurofins Pomona**

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Containers recd broken. Sufficient sample in remaining containers for analysis.
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).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

