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# ANALYTICAL REPORT

## PREPARED FOR

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City & County of Honolulu  
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Honolulu, Hawaii 96843

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## JOB DESCRIPTION

RED-HILL  
PFAS: Halawa Shaft Viewing Pool

## JOB NUMBER

380-178865-1

# 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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# Definitions/Glossary

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

## 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: 380-178865-1

**Job ID: 380-178865-1**

**Eurofins Eaton Analytical Pomona**

## **Job Narrative 380-178865-1**

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 10/23/2025 9:34 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 4.1°C and 4.4°C.

### **PFAS**

PFAS results by 533 for HALAWA SHAFT VIEWING POOL (380-178865-1) collected on 10/21/25 are a resample for for HALAWA SHAFT VIEWING POOL (380-177653-1) (XWB4)

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: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-178865-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.9		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.0	ng/L	1		537.1	Total/NA

**Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK**

**Lab Sample ID: 380-178865-2**

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: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-178865-1**

Date Collected: 10/21/25 09:50

Matrix: Water

Date Received: 10/23/25 09:34

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>3.4</b>		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.9</b>		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:43	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C3 HFPO-DA	101		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C6 PFDA	103		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C5 PFHxA	107		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C4 PFHpA	106		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C8 PFOA	103		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C9 PFNA	105		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C7 PFUnA	103		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C2 PFDoA	111		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C4 PFBA	113		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C5 PFPeA	111		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C3 PFBS	107		50 - 200			10/28/25 16:54	10/29/25 08:43	1
13C3 PFHxS	106		50 - 200			10/28/25 16:54	10/29/25 08:43	1

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# Client Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-178865-1**

Date Collected: 10/21/25 09:50

Matrix: Water

Date Received: 10/23/25 09:34

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	114		50 - 200	10/28/25 16:54	10/29/25 08:43	1
13C2-4:2-FTS	126		50 - 200	10/28/25 16:54	10/29/25 08:43	1
13C2-6:2-FTS	117		50 - 200	10/28/25 16:54	10/29/25 08:43	1
13C2-8:2-FTS	113		50 - 200	10/28/25 16:54	10/29/25 08:43	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		10/29/25 02:19	10/29/25 21:26	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.6</b>		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>3.7</b>		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:26	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	107		70 - 130			10/29/25 02:19	10/29/25 21:26	1
13C2 PFHxA	112		70 - 130			10/29/25 02:19	10/29/25 21:26	1
13C2 PFDA	110		70 - 130			10/29/25 02:19	10/29/25 21:26	1
13C3-GenX	106		70 - 130			10/29/25 02:19	10/29/25 21:26	1

**Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK**

**Lab Sample ID: 380-178865-2**

Date Collected: 10/21/25 09:50

Matrix: Water

Date Received: 10/23/25 09:34

**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		10/28/25 16:54	10/29/25 09:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1

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# Client Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK**

**Lab Sample ID: 380-178865-2**

Date Collected: 10/21/25 09:50

Matrix: Water

Date Received: 10/23/25 09:34

**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		10/28/25 16:54	10/29/25 09:21	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/28/25 16:54	10/29/25 09:21	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	103		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C6 PFDA	115		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C5 PFHxA	117		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C4 PFHpA	111		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C8 PFOA	111		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C9 PFNA	118		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C7 PFUnA	112		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C2 PFDoA	119		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C4 PFBA	110		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C5 PFPeA	106		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C3 PFBS	109		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C3 PFHxS	107		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C8 PFOS	117		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C2-4:2-FTS	120		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C2-6:2-FTS	115		50 - 200	10/28/25 16:54	10/29/25 09:21	1
13C2-8:2-FTS	113		50 - 200	10/28/25 16:54	10/29/25 09:21	1

# Client Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK**

**Lab Sample ID: 380-178865-2**

Date Collected: 10/21/25 09:50

Matrix: Water

Date Received: 10/23/25 09:34

**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		10/29/25 02:19	10/29/25 21:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/29/25 02:19	10/29/25 21:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	108		70 - 130			10/29/25 02:19	10/29/25 21:36	1
13C2 PFHxA	109		70 - 130			10/29/25 02:19	10/29/25 21:36	1
13C2 PFDA	109		70 - 130			10/29/25 02:19	10/29/25 21:36	1
13C3-GenX	105		70 - 130			10/29/25 02:19	10/29/25 21:36	1

# Action Limit Summary

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-178865-1**

## 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)	3.4		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.9		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)	3.6		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)	3.7		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 SHAFT VIEWING POOL BLANK**

**Lab Sample ID: 380-178865-2**

## 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: 380-178865-1  
 SDG: PFAS: Halawa Shaft Viewing Pool

## 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)
380-178865-1	HALAWA SHAFT VIEWING POC	107	112	110	106
380-178865-2	HALAWA SHAFT VIEWING POOL BLANK	108	109	109	105
380-178868-B-3-A MS	Matrix Spike	104	113	112	105
380-178868-C-3-A MSD	Matrix Spike Duplicate	101	112	111	105
LCS 380-183085/22-A	Lab Control Sample	97	105	109	99
MBL 380-183085/20-A	Method Blank	108	111	112	103
MRL 380-183085/21-A	Lab Control Sample	114	117	116	112

### 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: 380-178865-1  
 SDG: PFAS: Halawa Shaft Viewing Pool

## 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)	PFDaA (50-200)
380-178865-1	HALAWA SHAFT VIEWING POC	101	103	107	106	103	105	103	111
380-178865-1 MS	HALAWA SHAFT VIEWING POOL	100	105	104	107	105	110	107	111
380-178865-1 MSD	HALAWA SHAFT VIEWING POOL	111	149	107	116	122	143	147	180
380-178865-2	HALAWA SHAFT VIEWING POOL BLANK	103	115	117	111	111	118	112	119
LCS 380-182928/22-A	Lab Control Sample	100	109	109	110	107	107	107	119
MBL 380-182928/20-A	Method Blank	126	118	136	137	131	126	111	120
MRL 380-182928/21-A	Lab Control Sample	94	109	111	102	106	111	106	115

### 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)
380-178865-1	HALAWA SHAFT VIEWING POC	113	111	107	106	114	126	117	113
380-178865-1 MS	HALAWA SHAFT VIEWING POOL	109	106	107	103	112	120	109	107
380-178865-1 MSD	HALAWA SHAFT VIEWING POOL	109	107	120	120	154	127	137	153
380-178865-2	HALAWA SHAFT VIEWING POOL BLANK	110	106	109	107	117	120	115	113
LCS 380-182928/22-A	Lab Control Sample	111	109	117	108	116	122	119	122
MBL 380-182928/20-A	Method Blank	135	135	134	129	127	139	130	115
MRL 380-182928/21-A	Lab Control Sample	113	109	112	107	115	112	114	117

#### Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- 13C7PUA = 13C7 PFUnA
- PFDaA = 13C2 PFDaA
- 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: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MBL 380-182928/20-A**  
**Matrix: Water**  
**Analysis Batch: 183102**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 182928**

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		10/28/25 16:54	10/29/25 08:14	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		10/28/25 16:54	10/29/25 08:14	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	126		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C6 PFDA	118		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C5 PFHxA	136		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C4 PFHpA	137		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C8 PFOA	131		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C9 PFNA	126		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C7 PFUnA	111		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C2 PFDoA	120		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C4 PFBA	135		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C5 PFPeA	135		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C3 PFBS	134		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C3 PFHxS	129		50 - 200	10/28/25 16:54	10/29/25 08:14	1

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# QC Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MBL 380-182928/20-A**  
**Matrix: Water**  
**Analysis Batch: 183102**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 182928**

<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	127		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C2-4:2-FTS	139		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C2-6:2-FTS	130		50 - 200	10/28/25 16:54	10/29/25 08:14	1
13C2-8:2-FTS	115		50 - 200	10/28/25 16:54	10/29/25 08:14	1

**Lab Sample ID: LCS 380-182928/22-A**  
**Matrix: Water**  
**Analysis Batch: 183102**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 182928**

<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)	60.2	57.2		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	58.0		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	56.4		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	58.7		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	57.8		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	59.9		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	56.5		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	57.0		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	61.3		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	57.2		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	60.2	61.1		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	55.1		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	58.0		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	59.3		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	58.4		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	57.2		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	62.0		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	61.3		ng/L		102	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	59.4		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	55.5		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	57.5		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	58.9		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	58.5		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	57.8		ng/L		96	70 - 130

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# QC Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: LCS 380-182928/22-A**  
**Matrix: Water**  
**Analysis Batch: 183102**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 182928**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.2	59.2		ng/L		98	70 - 130
<b>LCS LCS</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
13C3 HFPO-DA	100		50 - 200				
13C6 PFDA	109		50 - 200				
13C5 PFHxA	109		50 - 200				
13C4 PFHpA	110		50 - 200				
13C8 PFOA	107		50 - 200				
13C9 PFNA	107		50 - 200				
13C7 PFUnA	107		50 - 200				
13C2 PFDoA	119		50 - 200				
13C4 PFBA	111		50 - 200				
13C5 PFPeA	109		50 - 200				
13C3 PFBS	117		50 - 200				
13C3 PFHxS	108		50 - 200				
13C8 PFOS	116		50 - 200				
13C2-4:2-FTS	122		50 - 200				
13C2-6:2-FTS	119		50 - 200				
13C2-8:2-FTS	122		50 - 200				

**Lab Sample ID: MRL 380-182928/21-A**  
**Matrix: Water**  
**Analysis Batch: 183102**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 182928**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.99	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.91	J	ng/L		95	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.07	J	ng/L		103	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.98	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.00	J	ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	2.01	1.89	J	ng/L		94	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.01	J	ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.10	J	ng/L		105	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.10	J	ng/L		104	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MRL 380-182928/21-A**  
**Matrix: Water**  
**Analysis Batch: 183102**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 182928**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	1.97	J	ng/L		98	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.36	J	ng/L		117	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.14	J	ng/L		106	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.90	J	ng/L		95	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.91	J	ng/L		95	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.02	J	ng/L		101	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.87	J	ng/L		93	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.94	J	ng/L		97	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	94		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	111		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	111		50 - 200
13C7 PFUnA	106		50 - 200
13C2 PFDoA	115		50 - 200
13C4 PFBA	113		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	112		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	115		50 - 200
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	114		50 - 200
13C2-8:2-FTS	117		50 - 200

**Lab Sample ID: 380-178865-1 MS**  
**Matrix: Water**  
**Analysis Batch: 183102**

**Client Sample ID: HALAWA SHAFT VIEWING POOL**  
**Prep Type: Total/NA**  
**Prep Batch: 182928**

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	55.2		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	57.1		ng/L		95	70 - 130

# QC Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-178865-1 MS

Matrix: Water

Analysis Batch: 183102

Client Sample ID: HALAWA SHAFT VIEWING POOL

Prep Type: Total/NA

Prep Batch: 182928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.2	61.9		ng/L		103	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	57.2		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	58.7		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	58.5		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	57.4		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	3.4		60.2	62.3		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	61.2		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	59.0		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.9		60.2	55.5		ng/L		87	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	59.9		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	58.5		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	57.5		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	60.2		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	64.3		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	63.2		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	57.4		ng/L		95	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	59.5		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	56.8		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	56.4		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	57.7		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	55.0		ng/L		91	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	56.7		ng/L		94	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	100		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	104		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	110		50 - 200
13C7 PFUnA	107		50 - 200
13C2 PFDoA	111		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	106		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	112		50 - 200

# QC Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: 380-178865-1 MS**  
**Matrix: Water**  
**Analysis Batch: 183102**

**Client Sample ID: HALAWA SHAFT VIEWING POOL**  
**Prep Type: Total/NA**  
**Prep Batch: 182928**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	120		50 - 200
13C2-6:2-FTS	109		50 - 200
13C2-8:2-FTS	107		50 - 200

**Lab Sample ID: 380-178865-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 183102**

**Client Sample ID: HALAWA SHAFT VIEWING POOL**  
**Prep Type: Total/NA**  
**Prep Batch: 182928**

<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		60.2	57.0		ng/L		95	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	55.6		ng/L		92	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	58.7		ng/L		97	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	56.2		ng/L		93	70 - 130	10	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	60.0		ng/L		99	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	56.6		ng/L		94	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	56.5		ng/L		94	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	61.1		ng/L		100	70 - 130	6	30
Perfluorohexanesulfonic acid (PFHxS)	3.4		60.2	65.4		ng/L		103	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	61.7		ng/L		100	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	56.6		ng/L		94	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	2.9		60.2	57.1		ng/L		90	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	59.4		ng/L		97	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	60.7		ng/L		101	70 - 130	4	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	56.4		ng/L		94	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	58.0		ng/L		96	70 - 130	4	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	62.0		ng/L		103	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	58.0		ng/L		96	70 - 130	9	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	64.9		ng/L		108	70 - 130	12	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	58.3		ng/L		97	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	54.6		ng/L		91	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	58.0		ng/L		96	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	59.0		ng/L		97	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	51.4		ng/L		85	70 - 130	7	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	55.8		ng/L		93	70 - 130	2	30

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

<i>Isotope Dilution</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
<i>%Recovery</i>	<i>Qualifier</i>		
13C3 HFPO-DA	111		50 - 200
13C6 PFDA	149		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	116		50 - 200
13C8 PFOA	122		50 - 200
13C9 PFNA	143		50 - 200
13C7 PFUnA	147		50 - 200
13C2 PFDoA	180		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	107		50 - 200
13C3 PFBS	120		50 - 200
13C3 PFHxS	120		50 - 200
13C8 PFOS	154		50 - 200
13C2-4:2-FTS	127		50 - 200
13C2-6:2-FTS	137		50 - 200
13C2-8:2-FTS	153		50 - 200

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

**Lab Sample ID: MBL 380-183085/20-A**  
**Matrix: Water**  
**Analysis Batch: 183209**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 183085**

<i>Analyte</i>	<i>MBL</i>	<i>MBL</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
	<i>Result</i>	<i>Qualifier</i>						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/29/25 02:19	10/29/25 19:38	1
<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
	<i>%Recovery</i>	<i>Qualifier</i>						
d5-NEtFOSAA	108		70 - 130			10/29/25 02:19	10/29/25 19:38	1
13C2 PFHxA	111		70 - 130			10/29/25 02:19	10/29/25 19:38	1
13C2 PFDA	112		70 - 130			10/29/25 02:19	10/29/25 19:38	1

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MBL 380-183085/20-A**  
**Matrix: Water**  
**Analysis Batch: 183209**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 183085**

<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	103	Qualifier	70 - 130	10/29/25 02:19	10/29/25 19:38	1

**Lab Sample ID: LCS 380-183085/22-A**  
**Matrix: Water**  
**Analysis Batch: 183209**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 183085**

<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	23.0		ng/L		92		70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	26.4		ng/L		105		70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	25.3		ng/L		101		70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	23.9		ng/L		95		70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	22.9		ng/L		91		70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	24.0		ng/L		96		70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	25.2		ng/L		100		70 - 130
Perfluorooctanoic acid (PFOA)	25.1	24.9		ng/L		99		70 - 130
Perfluorodecanoic acid (PFDA)	25.1	25.7		ng/L		102		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	25.8		ng/L		103		70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	25.6		ng/L		102		70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	25.4		ng/L		101		70 - 130
Perfluorononanoic acid (PFNA)	25.1	26.6		ng/L		106		70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	24.1		ng/L		96		70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	26.1		ng/L		104		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	25.1	26.4		ng/L		105		70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	27.6		ng/L		110		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	23.7		ng/L		95		70 - 130

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
d5-NEtFOSAA	97		70 - 130
13C2 PFHxA	105		70 - 130
13C2 PFDA	109		70 - 130
13C3-GenX	99		70 - 130

# QC Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MRL 380-183085/21-A**  
**Matrix: Water**  
**Analysis Batch: 183209**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 183085**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.20	J	ng/L		110	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.46	J	ng/L		123	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.34	J	ng/L		117	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.27	J	ng/L		113	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.26	J	ng/L		112	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.20	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.41	J	ng/L		120	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.41	J	ng/L		120	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.24	J	ng/L		112	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.33	J	ng/L		116	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	1.94	J	ng/L		97	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.01	2.31	J	ng/L		115	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.51	J	ng/L		125	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.41	J	ng/L		120	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.20	J	ng/L		109	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	114		70 - 130
13C2 PFHxA	117		70 - 130
13C2 PFDA	116		70 - 130
13C3-GenX	112		70 - 130

**Lab Sample ID: 380-178868-B-3-A MS**  
**Matrix: Water**  
**Analysis Batch: 183209**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 183085**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	24.6		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	26.8		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	25.8		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	25.8		ng/L		103	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: 380-178868-B-3-A MS**  
**Matrix: Water**  
**Analysis Batch: 183209**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 183085**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec	
				Result	Qualifier				Limits	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	24.1		ng/L		96	70 - 130	
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	24.5		ng/L		97	70 - 130	
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	25.6		ng/L		101	70 - 130	
Perfluorooctanoic acid (PFOA)	<2.0		25.2	26.1		ng/L		103	70 - 130	
Perfluorodecanoic acid (PFDA)	<2.0		25.2	25.9		ng/L		103	70 - 130	
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	27.8		ng/L		108	70 - 130	
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	27.4		ng/L		109	70 - 130	
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	25.7		ng/L		102	70 - 130	
Perfluorononanoic acid (PFNA)	<2.0		25.2	27.0		ng/L		107	70 - 130	
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	22.4		ng/L		89	70 - 130	
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	26.0		ng/L		103	70 - 130	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	27.3		ng/L		108	70 - 130	
11-Chloroeicosasfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	26.8		ng/L		106	70 - 130	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	25.0		ng/L		99	70 - 130	

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	104		70 - 130
13C2 PFHxA	113		70 - 130
13C2 PFDA	112		70 - 130
13C3-GenX	105		70 - 130

**Lab Sample ID: 380-178868-C-3-A MSD**  
**Matrix: Water**  
**Analysis Batch: 183209**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 183085**

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		25.2	22.8		ng/L		90	70 - 130		8	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	25.0		ng/L		99	70 - 130		7	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	25.5		ng/L		101	70 - 130		1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	24.1		ng/L		96	70 - 130		7	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	23.9		ng/L		95	70 - 130		1	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	24.2		ng/L		96	70 - 130		1	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	25.0		ng/L		99	70 - 130		2	30
Perfluorooctanoic acid (PFOA)	<2.0		25.2	25.4		ng/L		101	70 - 130		3	30
Perfluorodecanoic acid (PFDA)	<2.0		25.2	25.3		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: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

## LCMS

### Prep Batch: 182928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-178865-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-178865-2	HALAWA SHAFT VIEWING POOL BLANK	Total/NA	Water	533	
MBL 380-182928/20-A	Method Blank	Total/NA	Water	533	
LCS 380-182928/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-182928/21-A	Lab Control Sample	Total/NA	Water	533	
380-178865-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-178865-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	

### Prep Batch: 183085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-178865-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-178865-2	HALAWA SHAFT VIEWING POOL BLANK	Total/NA	Water	537.1 DW	
MBL 380-183085/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-183085/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-183085/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-178868-B-3-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-178868-C-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Analysis Batch: 183102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-178865-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	182928
380-178865-2	HALAWA SHAFT VIEWING POOL BLANK	Total/NA	Water	533	182928
MBL 380-182928/20-A	Method Blank	Total/NA	Water	533	182928
LCS 380-182928/22-A	Lab Control Sample	Total/NA	Water	533	182928
MRL 380-182928/21-A	Lab Control Sample	Total/NA	Water	533	182928
380-178865-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	182928
380-178865-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	182928

### Analysis Batch: 183209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-178865-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	183085
380-178865-2	HALAWA SHAFT VIEWING POOL BLANK	Total/NA	Water	537.1	183085
MBL 380-183085/20-A	Method Blank	Total/NA	Water	537.1	183085
LCS 380-183085/22-A	Lab Control Sample	Total/NA	Water	537.1	183085
MRL 380-183085/21-A	Lab Control Sample	Total/NA	Water	537.1	183085
380-178868-B-3-A MS	Matrix Spike	Total/NA	Water	537.1	183085
380-178868-C-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	183085

# Lab Chronicle

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

Job ID: 380-178865-1  
 SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-178865-1**

Date Collected: 10/21/25 09:50

Matrix: Water

Date Received: 10/23/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			182928	E2HD	EA POM	10/28/25 16:54
Total/NA	Analysis	533		1	183102	SZ9R	EA POM	10/29/25 08:43
Total/NA	Prep	537.1 DW			183085	G9MN	EA POM	10/29/25 02:19
Total/NA	Analysis	537.1		1	183209	M7ML	EA POM	10/29/25 21:26

**Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK**

**Lab Sample ID: 380-178865-2**

Date Collected: 10/21/25 09:50

Matrix: Water

Date Received: 10/23/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			182928	E2HD	EA POM	10/28/25 16:54
Total/NA	Analysis	533		1	183102	SZ9R	EA POM	10/29/25 09:21
Total/NA	Prep	537.1 DW			183085	G9MN	EA POM	10/29/25 02:19
Total/NA	Analysis	537.1		1	183209	M7ML	EA POM	10/29/25 21:36

**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: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

## Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

# Method Summary

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

Job ID: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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: 380-178865-1  
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-178865-1	HALAWA SHAFT VIEWING POOL	Water	10/21/25 09:50	10/23/25 09:34	Hawaii
380-178865-2	HALAWA SHAFT VIEWING POOL BLANK	Water	10/21/25 09:50	10/23/25 09:34	Hawaii

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

## Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-178865-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

**Login Number: 178865**

**List Number: 1**

**Creator: Edrosa, Rey**

**List Source: Eurofins Eaton Analytical Pomona**

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

