

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-168641-1

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



Authorized for release by
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Definitions/Glossary

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

Job ID: 380-168641-1
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: 380-168641-1

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Job Narrative 380-168641-1

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 8/28/2025 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 1.2°C.

PFAS

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: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-168641-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		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: 380-168641-2

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: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-168641-1

Date Collected: 08/26/25 09:40

Matrix: Water

Date Received: 08/28/25 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 (11CI-PF3OUdS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:13	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C6 PFDA	103		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C5 PFHxA	91		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C4 PFHpA	92		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C8 PFOA	100		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C9 PFNA	96		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C7 PFUnA	105		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C2 PFDoA	108		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C4 PFBA	100		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C5 PFPeA	101		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C3 PFBS	108		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C3 PFHxS	103		50 - 200	08/29/25 14:46	08/30/25 12:13	1

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Client Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-168641-1

Date Collected: 08/26/25 09:40

Matrix: Water

Date Received: 08/28/25 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	107		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C2-4:2-FTS	93		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C2-6:2-FTS	94		50 - 200	08/29/25 14:46	08/30/25 12:13	1
13C2-8:2-FTS	96		50 - 200	08/29/25 14:46	08/30/25 12:13	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		08/30/25 05:00	08/31/25 17:42	1
Perfluorooctanesulfonic acid (PFOS)	3.3		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 17:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	111		70 - 130			08/30/25 05:00	08/31/25 17:42	1
13C2 PFHxA	117		70 - 130			08/30/25 05:00	08/31/25 17:42	1
13C2 PFDA	111		70 - 130			08/30/25 05:00	08/31/25 17:42	1
13C3-GenX	117		70 - 130			08/30/25 05:00	08/31/25 17:42	1

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-168641-2

Date Collected: 08/26/25 09:40

Matrix: Water

Date Received: 08/28/25 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		08/29/25 14:46	08/30/25 12:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1

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Client Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-168641-2

Date Collected: 08/26/25 09:40

Matrix: Water

Date Received: 08/28/25 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		08/29/25 14:46	08/30/25 12:24	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/29/25 14:46	08/30/25 12:24	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	108		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C6 PFDA	111		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C5 PFHxA	103		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C4 PFHpA	103		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C8 PFOA	110		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C9 PFNA	108		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C7 PFUnA	109		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C2 PFDoA	115		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C4 PFBA	107		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C5 PFPeA	107		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C3 PFBS	107		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C3 PFHxS	101		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C8 PFOS	108		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C2-4:2-FTS	84		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C2-6:2-FTS	87		50 - 200			08/29/25 14:46	08/30/25 12:24	1
13C2-8:2-FTS	94		50 - 200			08/29/25 14:46	08/30/25 12:24	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-168641-2

Date Collected: 08/26/25 09:40

Matrix: Water

Date Received: 08/28/25 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		08/30/25 05:00	08/31/25 20:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/30/25 05:00	08/31/25 20:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130			08/30/25 05:00	08/31/25 20:25	1
13C2 PFHxA	112		70 - 130			08/30/25 05:00	08/31/25 20:25	1
13C2 PFDA	114		70 - 130			08/30/25 05:00	08/31/25 20:25	1
13C3-GenX	110		70 - 130			08/30/25 05:00	08/31/25 20:25	1

Action Limit Summary

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-168641-1

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)	3.6		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		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)	3.3		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	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: 380-168641-2

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: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-168641-1	Halawa Shaft Viewing Pool	111	117	111	117
380-168641-1 MS	Halawa Shaft Viewing Pool	105	112	108	119
380-168641-1 MSD	Halawa Shaft Viewing Pool	110	113	114	117
380-168641-2	Halawa Shaft Viewing Pool	106	112	114	110
	Blank				
LCS 380-171605/23-A	Lab Control Sample	106	117	112	123
MBL 380-171605/21-A	Method Blank	108	111	112	115
MRL 380-171605/22-A	Lab Control Sample	107	117	120	120
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: 380-168641-1
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)	PFD _o A (50-200)
380-168641-1	Halawa Shaft Viewing Pool	97	103	91	92	100	96	105	108
380-168641-1 MS	Halawa Shaft Viewing Pool	88	93	84	83	89	86	97	97
380-168641-1 MSD	Halawa Shaft Viewing Pool	94	100	89	87	94	93	99	106
380-168641-2	Halawa Shaft Viewing Pool	108	111	103	103	110	108	109	115
	Blank								
LCS 380-171524/22-A	Lab Control Sample	107	110	98	97	110	104	107	108
MBL 380-171524/20-A	Method Blank	114	116	107	107	115	112	115	116
MRL 380-171524/21-A	Lab Control Sample	109	113	100	103	113	107	109	109
		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-168641-1	Halawa Shaft Viewing Pool	100	101	108	103	107	93	94	96
380-168641-1 MS	Halawa Shaft Viewing Pool	94	94	104	100	107	91	100	97
380-168641-1 MSD	Halawa Shaft Viewing Pool	97	101	102	99	105	87	88	91
380-168641-2	Halawa Shaft Viewing Pool	107	107	107	101	108	84	87	94
	Blank								
LCS 380-171524/22-A	Lab Control Sample	106	110	105	100	108	87	88	93
MBL 380-171524/20-A	Method Blank	113	111	105	104	108	84	88	94
MRL 380-171524/21-A	Lab Control Sample	108	110	105	103	108	89	89	94
Surrogate Legend									
HFPODA = 13C3 HFPO-DA									
C6PFDA = 13C6 PFDA									
13C5PHA = 13C5 PFHxA									
C4PFHA = 13C4 PFHpA									
C8PFOA = 13C8 PFOA									
C9PFNA = 13C9 PFNA									
13C7PUA = 13C7 PFUnA									
PFD _o A = 13C2 PFD _o A									
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: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-171524/20-A

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 171524

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<0.30		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<0.30		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		08/29/25 14:46	08/30/25 11:08	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	114		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C6 PFDA	116		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C5 PFHxA	107		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C4 PFHpA	107		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C8 PFOA	115		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C9 PFNA	112		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C7 PFUnA	115		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C2 PFDoA	116		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C4 PFBA	113		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C5 PFPeA	111		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C3 PFBS	105		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C3 PFHxS	104		50 - 200	08/29/25 14:46	08/30/25 11:08	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-171524/20-A

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 171524

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	108		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C2-4:2-FTS	84		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C2-6:2-FTS	88		50 - 200	08/29/25 14:46	08/30/25 11:08	1
13C2-8:2-FTS	94		50 - 200	08/29/25 14:46	08/30/25 11:08	1

Lab Sample ID: LCS 380-171524/22-A

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 171524

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	53.1		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	57.5		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	63.3		ng/L		105	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	57.7		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	59.0		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	58.4		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	58.5		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	59.6		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	61.2		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	60.2		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	60.2	60.3		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	59.1		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	55.9		ng/L		93	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	59.4		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	58.6		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	61.4		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	57.7		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	60.2		ng/L		100	70 - 130
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	60.2	59.9		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.2	56.7		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	57.7		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	58.7		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	56.9		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	58.2		ng/L		97	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-171524/22-A

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 171524

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.2	59.9		ng/L		99	70 - 130
	LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	107		50 - 200				
13C6 PFDA	110		50 - 200				
13C5 PFHxA	98		50 - 200				
13C4 PFHpA	97		50 - 200				
13C8 PFOA	110		50 - 200				
13C9 PFNA	104		50 - 200				
13C7 PFUnA	107		50 - 200				
13C2 PFDoA	108		50 - 200				
13C4 PFBA	106		50 - 200				
13C5 PFPeA	110		50 - 200				
13C3 PFBS	105		50 - 200				
13C3 PFHxS	100		50 - 200				
13C8 PFOS	108		50 - 200				
13C2-4:2-FTS	87		50 - 200				
13C2-6:2-FTS	88		50 - 200				
13C2-8:2-FTS	93		50 - 200				

Lab Sample ID: MRL 380-171524/21-A

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 171524

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.87	J	ng/L		93	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.87	J	ng/L		93	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.02	J	ng/L		100	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.00	J	ng/L		100	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.02	J	ng/L		100	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.16	J	ng/L		108	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-171524/21-A

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 171524

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.07	J	ng/L		103	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.16	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	1.95	J	ng/L		97	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.94	J	ng/L		97	50 - 150

Isotope Dilution	%Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	109		50 - 200
13C6 PFDA	113		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	103		50 - 200
13C8 PFOA	113		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	108		50 - 200
13C5 PFPeA	110		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	89		50 - 200
13C2-6:2-FTS	89		50 - 200
13C2-8:2-FTS	94		50 - 200

Lab Sample ID: 380-168641-1 MS

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 171524

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	110		ng/L		92	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	115		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	110		ng/L		91	70 - 130

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QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-168641-1 MS

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 171524

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	116		ng/L		97	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	120		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	115		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	116		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	113		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	3.6		120	128		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	115		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	120		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.5		120	124		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	115		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	116		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	119		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	110		ng/L		91	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	116		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		120	113		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	110		ng/L		91	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	110		ng/L		91	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	120		ng/L		99	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	115		ng/L		96	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	119		ng/L		99	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	88		50 - 200
13C6 PFDA	93		50 - 200
13C5 PFHxA	84		50 - 200
13C4 PFHpA	83		50 - 200
13C8 PFOA	89		50 - 200
13C9 PFNA	86		50 - 200
13C7 PFUnA	97		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	94		50 - 200
13C5 PFPeA	94		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	107		50 - 200

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QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-168641-1 MS

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 171524

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	91		50 - 200
13C2-6:2-FTS	100		50 - 200
13C2-8:2-FTS	97		50 - 200

Lab Sample ID: 380-168641-1 MSD

Matrix: Water

Analysis Batch: 171613

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 171524

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	109		ng/L		91	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	114		ng/L		94	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	118		ng/L		97	70 - 130	7	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	115		ng/L		95	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	118		ng/L		97	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		121	113		ng/L		93	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	116		ng/L		96	70 - 130	0	30
Perfluorooheptanoic acid (PFHpA)	<2.0		121	115		ng/L		95	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	3.6		121	123		ng/L		99	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		121	120		ng/L		98	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		121	117		ng/L		97	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	3.5		121	121		ng/L		97	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		121	117		ng/L		96	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	118		ng/L		98	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		121	117		ng/L		97	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	124		ng/L		102	70 - 130	4	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	111		ng/L		92	70 - 130	7	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	113		ng/L		94	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	118		ng/L		98	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	114		ng/L		95	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	110		ng/L		91	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	108		ng/L		89	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	<2.0		121	109		ng/L		90	70 - 130	9	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	117		ng/L		97	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	116		ng/L		96	70 - 130	3	30

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QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Isotope Dilution	MSD	MSD	Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	94		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	89		50 - 200
13C4 PFHpA	87		50 - 200
13C8 PFOA	94		50 - 200
13C9 PFNA	93		50 - 200
13C7 PFUnA	99		50 - 200
13C2 PFDoA	106		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	101		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	99		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	87		50 - 200
13C2-6:2-FTS	88		50 - 200
13C2-8:2-FTS	91		50 - 200

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

Lab Sample ID: MBL 380-171605/21-A
Matrix: Water
Analysis Batch: 171696

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 171605

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		08/30/25 05:00	08/31/25 17:13	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluorooctanoic acid (PFOA)	0.397	J	2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/30/25 05:00	08/31/25 17:13	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-171605/21-A

Matrix: Water

Analysis Batch: 171696

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 171605

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	115		70 - 130	08/30/25 05:00	08/31/25 17:13	1

Lab Sample ID: LCS 380-171605/23-A

Matrix: Water

Analysis Batch: 171696

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 171605

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	50.3	54.2		ng/L		108	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	50.3	50.2		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.3	51.2		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.3	52.2		ng/L		104	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.3	50.3		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	50.3	52.3		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	50.3	52.7		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	50.3	52.3		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	50.3	51.3		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.3	52.2		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.3	53.5		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.3	53.0		ng/L		105	70 - 130
Perfluorononanoic acid (PFNA)	50.3	51.4		ng/L		102	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.3	50.8		ng/L		101	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.3	58.3		ng/L		116	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.3	50.7		ng/L		101	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.3	51.3		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.3	53.7		ng/L		107	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	106		70 - 130
13C2 PFHxA	117		70 - 130
13C2 PFDA	112		70 - 130
13C3-GenX	123		70 - 130

QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-171605/22-A
Matrix: Water
Analysis Batch: 171696

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 171605

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	2.01	2.24	J	ng/L		112	50 - 150
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	2.01	2.16	J	ng/L		107	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.23	J	ng/L		111	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.15	J	ng/L		107	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.24	J	ng/L		112	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.27	J	ng/L		113	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.25	J	ng/L		112	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.98	J	ng/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.22	J	ng/L		111	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.23	J	ng/L		111	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.43	J	ng/L		121	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.09	J	ng/L		104	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.08	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.26	J	ng/L		113	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	107		70 - 130
13C2 PFHxA	117		70 - 130
13C2 PFDA	120		70 - 130
13C3-GenX	120		70 - 130

Lab Sample ID: 380-168641-1 MS
Matrix: Water
Analysis Batch: 171696

Client Sample ID: Halawa Shaft Viewing Pool
Prep Type: Total/NA
Prep Batch: 171605

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		50.2	56.3		ng/L		112	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorooctanesulfonic acid (PFOS)	3.3		50.2	55.5		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	51.2		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	52.7		ng/L		105	70 - 130

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QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-168641-1 MS

Matrix: Water

Analysis Batch: 171696

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 171605

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits		
	Result	Qualifier	Added	Result	Qualifier			%Rec			
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	<2.0		50.2	49.3		ng/L		98	70 - 130		
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	55.3		ng/L		107	70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	52.7		ng/L		105	70 - 130		
Perfluorooctanoic acid (PFOA)	<2.0		50.2	54.5		ng/L		106	70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		50.2	54.0		ng/L		108	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)	3.7		50.2	54.7		ng/L		102	70 - 130		
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	55.6		ng/L		110	70 - 130		
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	51.6		ng/L		101	70 - 130		
Perfluorononanoic acid (PFNA)	<2.0		50.2	50.5		ng/L		101	70 - 130		
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	47.9		ng/L		95	70 - 130		
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	57.6		ng/L		115	70 - 130		
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	52.0		ng/L		104	70 - 130		
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	51.6		ng/L		103	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	55.1		ng/L		110	70 - 130		
		MS			MS						
Surrogate	%Recovery	Qualifier	Limits								
d5-NEtFOSAA	105		70 - 130								
13C2 PFHxA	112		70 - 130								
13C2 PFDA	108		70 - 130								
13C3-GenX	119		70 - 130								

Lab Sample ID: 380-168641-1 MSD

Matrix: Water

Analysis Batch: 171696

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 171605

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.3	54.0		ng/L		107	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	3.3		50.3	53.8		ng/L		100	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.3	51.8		ng/L		103	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.3	51.6		ng/L		103	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	<2.0		50.3	48.9		ng/L		97	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.3	54.1		ng/L		105	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.3	51.8		ng/L		103	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		50.3	52.9		ng/L		103	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		50.3	51.9		ng/L		103	70 - 130	4	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-168641-1 MSD

Matrix: Water

Analysis Batch: 171696

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 171605

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	3.7		50.3	55.3		ng/L		103	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.3	49.7		ng/L		98	70 - 130	11	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.3	51.4		ng/L		101	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		50.3	52.3		ng/L		104	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.3	46.1		ng/L		92	70 - 130	4	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.3	56.3		ng/L		112	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.3	49.7		ng/L		99	70 - 130	5	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.3	48.8		ng/L		97	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.3	53.2		ng/L		106	70 - 130	4	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	110		70 - 130								
13C2 PFHxA	113		70 - 130								
13C2 PFDA	114		70 - 130								
13C3-GenX	117		70 - 130								

QC Association Summary

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 171524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-168641-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	
380-168641-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	533	
MBL 380-171524/20-A	Method Blank	Total/NA	Water	533	
LCS 380-171524/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-171524/21-A	Lab Control Sample	Total/NA	Water	533	
380-168641-1 MS	Halawa Shaft Viewing Pool	Total/NA	Water	533	
380-168641-1 MSD	Halawa Shaft Viewing Pool	Total/NA	Water	533	

Prep Batch: 171605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-168641-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
380-168641-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	537.1 DW	
MBL 380-171605/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-171605/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-171605/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-168641-1 MS	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
380-168641-1 MSD	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	

Analysis Batch: 171613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-168641-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	171524
380-168641-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	533	171524
MBL 380-171524/20-A	Method Blank	Total/NA	Water	533	171524
LCS 380-171524/22-A	Lab Control Sample	Total/NA	Water	533	171524
MRL 380-171524/21-A	Lab Control Sample	Total/NA	Water	533	171524
380-168641-1 MS	Halawa Shaft Viewing Pool	Total/NA	Water	533	171524
380-168641-1 MSD	Halawa Shaft Viewing Pool	Total/NA	Water	533	171524

Analysis Batch: 171696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-168641-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	171605
380-168641-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	537.1	171605
MBL 380-171605/21-A	Method Blank	Total/NA	Water	537.1	171605
LCS 380-171605/23-A	Lab Control Sample	Total/NA	Water	537.1	171605
MRL 380-171605/22-A	Lab Control Sample	Total/NA	Water	537.1	171605
380-168641-1 MS	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	171605
380-168641-1 MSD	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	171605

Lab Chronicle

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

Job ID: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-168641-1

Date Collected: 08/26/25 09:40

Matrix: Water

Date Received: 08/28/25 09:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			171524	N8NE	EA POM	08/29/25 14:46
Total/NA	Analysis	533		1	171613	M7ML	EA POM	08/30/25 12:13
Total/NA	Prep	537.1 DW			171605	E9PK	EA POM	08/30/25 05:00
Total/NA	Analysis	537.1		1	171696	SZ9R	EA POM	08/31/25 17:42

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-168641-2

Date Collected: 08/26/25 09:40

Matrix: Water

Date Received: 08/28/25 09:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			171524	N8NE	EA POM	08/29/25 14:46
Total/NA	Analysis	533		1	171613	M7ML	EA POM	08/30/25 12:24
Total/NA	Prep	537.1 DW			171605	E9PK	EA POM	08/30/25 05:00
Total/NA	Analysis	537.1		1	171696	SZ9R	EA POM	08/31/25 20:25

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: 380-168641-1
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
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- 15
- 16
- 17

Method Summary

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

Job ID: 380-168641-1
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: 380-168641-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-168641-1	Halawa Shaft Viewing Pool	Water	08/26/25 09:40	08/28/25 09:38	Hawaii
380-168641-2	Halawa Shaft Viewing Pool Blank	Water	08/26/25 09:40	08/28/25 09:38	Hawaii

- 1
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- 3
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- 5
- 6
- 7
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- 13
- 14
- 15
- 16
- 17

Monrovia, CA (Suite 100)

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

Chain of Custody Record



Environment Testing
America

Client Information Client Contact: Jason Rakofsky Phone: +1 808 748 5840 E-Mail: Rachelle.Arada@et.eurofins.com		Lab PM: Arada, Rachelle State of Origin:		Carrier Tracking No(s): 380-27941-2757.2 Page: Page 2 of 2 Job #:	
City & County of Honolulu Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State, Zip: HI, 96843 Phone: 808-748-5840 (tel) Email: kiwamoto@hbws.org		PWSID: Due Date Requested: TAT Requested (days): RUSH Compliance Project: Δ No PO #: C20525101 exp 05312023 WO #: 38001111 Project #: 38001111 Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Y - Trizma Z - other (specify)	
Sample Identification Sample Date: 26-Aug-2025 Sample Time: 0940 Sample Type: G (Grab) Matrix: Water Preservation Code:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) SUBCONTRACT - 626 PAH Phyla LL (EAL) + TICs 80168_GRO_LL - (MOD) GRO 80168_DRO_LL - C8 - HNL Ranges C10-C24/C24-C36/C8-C18 525.2_PREC - (MOD) 525plus PLUS TICs 537.1_DW_PREC - 537.1 Full List 533 - All Analytes		Total Number of Containers: 3 Special Instructions/Note:	
Halawa Shaft Viewing Pool Halawa Shaft Viewing Pool Blank		26-Aug-2025 0940 G Water		3 1 1	
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months	
Empty Kit Relinquished by:		Date: 8/22/25 1100 Company: HBWS		Method of Shipment: FEDEX 8829 1524 8944 Date/Time: 08/28/25 09:38 Company: EAP	
Relinquished by:		Date/Time:		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.		Cooler Temperature(s) °C and Other Remarks: (75)Δ 1.2-0.0-1.2 °C Ver 01/16/2019	

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-168641-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 168641

List Number: 1

Creator: Hernandez, Orlando

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).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	