

ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-155464-1

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
Maria Lopez, Project Manager
Maria.Lopez@et.eurofinsus.com
(626)386-1100

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Definitions/Glossary

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

Job ID: 380-155464-1
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: 380-155464-1

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Job Narrative 380-155464-1

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

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

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

Receipt

The samples were received on 6/13/2025 10:04 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 2.8°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: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.7		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: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-2

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: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-1

Date Collected: 06/10/25 10:00

Matrix: Water

Date Received: 06/13/25 10:04

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		06/16/25 17:10	06/17/25 10:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluorohexanesulfonic acid (PFHxS)	3.5		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 10:27	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	99		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C6 PFDA	100		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C5 PFHxA	100		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C4 PFHpA	103		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C8 PFOA	102		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C9 PFNA	101		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C7 PFUnA	99		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C2 PFDoA	100		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C4 PFBA	104		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C5 PFPeA	108		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C3 PFBS	100		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C3 PFHxS	105		50 - 200	06/16/25 17:10	06/17/25 10:27	1

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Client Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-1

Date Collected: 06/10/25 10:00

Matrix: Water

Date Received: 06/13/25 10:04

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	102		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C2-4:2-FTS	126		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C2-6:2-FTS	111		50 - 200	06/16/25 17:10	06/17/25 10:27	1
13C2-8:2-FTS	103		50 - 200	06/16/25 17:10	06/17/25 10:27	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		06/14/25 16:54	06/15/25 21:06	1
Perfluorooctanesulfonic acid (PFOS)	3.7		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130	06/14/25 16:54	06/15/25 21:06	1
13C2 PFHxA	91		70 - 130	06/14/25 16:54	06/15/25 21:06	1
13C2 PFDA	96		70 - 130	06/14/25 16:54	06/15/25 21:06	1
13C3-GenX	92		70 - 130	06/14/25 16:54	06/15/25 21:06	1

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-2

Date Collected: 06/10/25 10:00

Matrix: Water

Date Received: 06/13/25 10:04

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		06/16/25 17:10	06/17/25 11:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1

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Client Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-2

Date Collected: 06/10/25 10:00

Matrix: Water

Date Received: 06/13/25 10:04

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		06/16/25 17:10	06/17/25 11:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/16/25 17:10	06/17/25 11:53	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	98		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C6 PFDA	96		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C5 PFHxA	102		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C4 PFHpA	102		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C8 PFOA	100		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C9 PFNA	99		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C7 PFUnA	94		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C2 PFDoA	95		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C4 PFBA	110		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C5 PFPeA	102		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C3 PFBS	102		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C3 PFHxS	106		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C8 PFOS	101		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C2-4:2-FTS	112		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C2-6:2-FTS	107		50 - 200	06/16/25 17:10	06/17/25 11:53	1
13C2-8:2-FTS	103		50 - 200	06/16/25 17:10	06/17/25 11:53	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-2

Date Collected: 06/10/25 10:00

Matrix: Water

Date Received: 06/13/25 10:04

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		06/14/25 16:54	06/15/25 21:27	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/14/25 16:54	06/15/25 21:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	95		70 - 130	06/14/25 16:54	06/15/25 21:27	1
13C2 PFHxA	93		70 - 130	06/14/25 16:54	06/15/25 21:27	1
13C2 PFDA	98		70 - 130	06/14/25 16:54	06/15/25 21:27	1
13C3-GenX	85		70 - 130	06/14/25 16:54	06/15/25 21:27	1

Action Limit Summary

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.5		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)	3.7		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: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-2

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-155464-1
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)
380-155153-R-1-A MS	Matrix Spike	98	93	97	89
380-155153-S-1-A MSD	Matrix Spike Duplicate	93	96	100	92
380-155464-1	Halawa Shaft Viewing Pool	106	91	96	92
380-155464-2	FB: Halawa Shaft Viewing Pool	95	93	98	85
LCS 380-157961/24-A	Lab Control Sample	91	90	94	88
MBL 380-157961/22-A	Method Blank	106	96	101	93
MRL 380-157961/23-A	Lab Control Sample	98	93	96	87

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: 380-155464-1
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)
380-155464-1	Halawa Shaft Viewing Pool	99	100	100	103	102	101	99	100
380-155464-1 MS	Halawa Shaft Viewing Pool	106	104	101	102	104	104	103	100
380-155464-1 MSD	Halawa Shaft Viewing Pool	101	97	98	102	98	99	97	97
380-155464-2	FB: Halawa Shaft Viewing Pool	98	96	102	102	100	99	94	95
LCS 380-158202/13-A	Lab Control Sample	101	101	101	103	102	102	99	99
MBL 380-158202/11-A	Method Blank	97	101	104	105	105	103	100	99
MRL 380-158202/12-A	Lab Control Sample	98	99	105	102	104	103	97	95

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)
380-155464-1	Halawa Shaft Viewing Pool	104	108	100	105	102	126	111	103
380-155464-1 MS	Halawa Shaft Viewing Pool	104	104	101	106	101	110	107	99
380-155464-1 MSD	Halawa Shaft Viewing Pool	99	104	97	103	101	122	129	112
380-155464-2	FB: Halawa Shaft Viewing Pool	110	102	102	106	101	112	107	103
LCS 380-158202/13-A	Lab Control Sample	105	106	108	106	104	108	107	107
MBL 380-158202/11-A	Method Blank	105	105	104	107	102	115	108	103
MRL 380-158202/12-A	Lab Control Sample	106	102	98	102	101	109	106	102

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: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-158202/11-A

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 158202

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		06/16/25 17:10	06/17/25 09:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<0.30		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		06/16/25 17:10	06/17/25 09:58	1
Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C6 PFDA	101		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C5 PFHxA	104		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C4 PFHpA	105		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C8 PFOA	105		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C9 PFNA	103		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C7 PFUnA	100		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C2 PFDoA	99		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C4 PFBA	105		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C5 PFPeA	105		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C3 PFBS	104		50 - 200			06/16/25 17:10	06/17/25 09:58	1
13C3 PFHxS	107		50 - 200			06/16/25 17:10	06/17/25 09:58	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-158202/11-A

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 158202

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	102		50 - 200	06/16/25 17:10	06/17/25 09:58	1
13C2-4:2-FTS	115		50 - 200	06/16/25 17:10	06/17/25 09:58	1
13C2-6:2-FTS	108		50 - 200	06/16/25 17:10	06/17/25 09:58	1
13C2-8:2-FTS	103		50 - 200	06/16/25 17:10	06/17/25 09:58	1

Lab Sample ID: LCS 380-158202/13-A

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 158202

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	120		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	118		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	118		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	117		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	117		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	120	118		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	120	120		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	116		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	120		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	120	121		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	120	120		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	116		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	120	116		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	120		ng/L		100	70 - 130
Perfluorobutanoic acid (PFBA)	120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	122		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	125		ng/L		104	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	119		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	118		ng/L		98	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	119		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	116		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	120	116		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	121		ng/L		101	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-158202/13-A

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 158202

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	118		ng/L		99	70 - 130
	LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	101		50 - 200				
13C6 PFDA	101		50 - 200				
13C5 PFHxA	101		50 - 200				
13C4 PFHpA	103		50 - 200				
13C8 PFOA	102		50 - 200				
13C9 PFNA	102		50 - 200				
13C7 PFUnA	99		50 - 200				
13C2 PFDoA	99		50 - 200				
13C4 PFBA	105		50 - 200				
13C5 PFPeA	106		50 - 200				
13C3 PFBS	108		50 - 200				
13C3 PFHxS	106		50 - 200				
13C8 PFOS	104		50 - 200				
13C2-4:2-FTS	108		50 - 200				
13C2-6:2-FTS	107		50 - 200				
13C2-8:2-FTS	107		50 - 200				

Lab Sample ID: MRL 380-158202/12-A

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 158202

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.20	J	ng/L		110	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.00	2.04	J	ng/L		102	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.10	J	ng/L		105	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.97	J	ng/L		98	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.97	J	ng/L		98	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.06	J	ng/L		103	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-158202/12-A

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 158202

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.10	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.05	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.29	J	ng/L		114	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.87	J	ng/L		93	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.82	J	ng/L		91	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.01	J	ng/L		100	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.05	J	ng/L		102	50 - 150

Isotope Dilution	%Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	98		50 - 200
13C6 PFDA	99		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	104		50 - 200
13C9 PFNA	103		50 - 200
13C7 PFUnA	97		50 - 200
13C2 PFDoA	95		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	102		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	102		50 - 200
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	102		50 - 200

Lab Sample ID: 380-155464-1 MS

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 158202

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	117		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	121		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	120		ng/L		99	70 - 130

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QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-155464-1 MS

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 158202

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	117		ng/L		97	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	126		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	117		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	119		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	119		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	3.5		120	122		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	122		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	117		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.5		120	123		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	119		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	120		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	121		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	123		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	119		ng/L		99	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		120	115		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	119		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	117		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	123		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	119		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	120		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	114		ng/L		95	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	106		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	104		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	103		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	101		50 - 200

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QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-155464-1 MS

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 158202

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	99		50 - 200

Lab Sample ID: 380-155464-1 MSD

Matrix: Water

Analysis Batch: 158308

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 158202

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<2.0		120	115		ng/L		95	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	<2.0		120	114		ng/L		95	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	114		ng/L		95	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	113		ng/L		94	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	128		ng/L		106	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		120	114		ng/L		95	70 - 130	3	30
Perfluorododecanoic acid (PFDaA)	<2.0		120	120		ng/L		100	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	113		ng/L		93	70 - 130	6	30
Perfluorohexanesulfonic acid (PFHxS)	3.5		120	119		ng/L		96	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	118		ng/L		97	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		120	118		ng/L		98	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	3.5		120	120		ng/L		97	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		120	122		ng/L		100	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	115		ng/L		96	70 - 130	4	30
Perfluorobutanoic acid (PFBA)	<2.0		120	115		ng/L		96	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	112		ng/L		93	70 - 130	8	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	118		ng/L		98	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	120		ng/L		99	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	109		ng/L		90	70 - 130	6	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		120	121		ng/L		101	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	117		ng/L		98	70 - 130	0	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	109		ng/L		91	70 - 130	12	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	106		ng/L		88	70 - 130	11	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	116		ng/L		97	70 - 130	3	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	116		ng/L		96	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	101		50 - 200
13C6 PFDA	97		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	98		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	97		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	122		50 - 200
13C2-6:2-FTS	129		50 - 200
13C2-8:2-FTS	112		50 - 200

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

Lab Sample ID: MBL 380-157961/22-A
Matrix: Water
Analysis Batch: 158003

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 157961

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		06/14/25 16:54	06/15/25 18:49	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130			06/14/25 16:54	06/15/25 18:49	1
13C2 PFHxA	96		70 - 130			06/14/25 16:54	06/15/25 18:49	1
13C2 PFDA	101		70 - 130			06/14/25 16:54	06/15/25 18:49	1

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QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-157961/22-A
Matrix: Water
Analysis Batch: 158003

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 157961

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	93		70 - 130	06/14/25 16:54	06/15/25 18:49	1

Lab Sample ID: LCS 380-157961/24-A
Matrix: Water
Analysis Batch: 158003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 157961

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	50.1	43.0		ng/L		86	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	50.1	51.4		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	45.1		ng/L		90	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	46.8		ng/L		93	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	46.1		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	45.8		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	45.3		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	48.5		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	50.2		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.1	49.9		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	50.1		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	49.0		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	50.1	49.7		ng/L		99	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	44.7		ng/L		89	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	49.2		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.1	50.5		ng/L		101	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	49.3		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	46.2		ng/L		92	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	91		70 - 130
13C2 PFHxA	90		70 - 130
13C2 PFDA	94		70 - 130
13C3-GenX	88		70 - 130

QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-157961/23-A

Matrix: Water

Analysis Batch: 158003

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 157961

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.13	J	ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.94	J	ng/L		97	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.14	J	ng/L		107	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.03	J	ng/L		102	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.17	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.19	J	ng/L		110	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.23	J	ng/L		112	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.18	J	ng/L		109	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.11	J	ng/L		105	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.09	J	ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.22	J	ng/L		111	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	93		70 - 130
13C2 PFDA	96		70 - 130
13C3-GenX	87		70 - 130

Lab Sample ID: 380-155153-R-1-A MS

Matrix: Water

Analysis Batch: 158003

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 157961

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	45.6		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	51.2		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	46.3		ng/L		92	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	50.4		ng/L		100	70 - 130

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QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-155153-R-1-A MS

Matrix: Water

Analysis Batch: 158003

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 157961

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits		
	Result	Qualifier	Added	Result	Qualifier							
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	<2.0		50.2	49.5		ng/L		99		70 - 130		
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	47.8		ng/L		93		70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	46.3		ng/L		92		70 - 130		
Perfluorooctanoic acid (PFOA)	<2.0		50.2	51.1		ng/L		100		70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		50.2	51.2		ng/L		102		70 - 130		
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	49.1		ng/L		95		70 - 130		
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	48.9		ng/L		95		70 - 130		
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	50.3		ng/L		99		70 - 130		
Perfluorononanoic acid (PFNA)	<2.0		50.2	51.3		ng/L		101		70 - 130		
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	38.9		ng/L		78		70 - 130		
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	47.2		ng/L		94		70 - 130		
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	50.1		ng/L		100		70 - 130		
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	47.4		ng/L		94		70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	48.9		ng/L		97		70 - 130		
		MS	MS									
Surrogate	%Recovery	Qualifier	Limits									
d5-NEtFOSAA	98		70 - 130									
13C2 PFHxA	93		70 - 130									
13C2 PFDA	97		70 - 130									
13C3-GenX	89		70 - 130									

Lab Sample ID: 380-155153-S-1-A MSD

Matrix: Water

Analysis Batch: 158003

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 157961

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		50.2	46.9		ng/L		93	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	51.6		ng/L		101	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	48.6		ng/L		97	70 - 130	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	49.8		ng/L		99	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	47.8		ng/L		95	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	49.9		ng/L		97	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	47.0		ng/L		94	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	53.1		ng/L		104	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	51.8		ng/L		103	70 - 130	1	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-155153-S-1-A MSD

Matrix: Water

Analysis Batch: 158003

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 157961

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	48.4		ng/L		93	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	47.7		ng/L		93	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	51.9		ng/L		102	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	54.2		ng/L		107	70 - 130	5	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	40.6		ng/L		81	70 - 130	4	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		50.2	50.2		ng/L		100	70 - 130	6	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	48.9		ng/L		97	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	47.1		ng/L		94	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	50.1		ng/L		100	70 - 130	2	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	93		70 - 130								
13C2 PFHxA	96		70 - 130								
13C2 PFDA	100		70 - 130								
13C3-GenX	92		70 - 130								

QC Association Summary

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 157961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-155464-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
380-155464-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
MBL 380-157961/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-157961/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-157961/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-155153-R-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-155153-S-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 158003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-155464-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	157961
380-155464-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	537.1	157961
MBL 380-157961/22-A	Method Blank	Total/NA	Water	537.1	157961
LCS 380-157961/24-A	Lab Control Sample	Total/NA	Water	537.1	157961
MRL 380-157961/23-A	Lab Control Sample	Total/NA	Water	537.1	157961
380-155153-R-1-A MS	Matrix Spike	Total/NA	Water	537.1	157961
380-155153-S-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	157961

Prep Batch: 158202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-155464-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	
380-155464-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	533	
MBL 380-158202/11-A	Method Blank	Total/NA	Water	533	
LCS 380-158202/13-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-158202/12-A	Lab Control Sample	Total/NA	Water	533	
380-155464-1 MS	Halawa Shaft Viewing Pool	Total/NA	Water	533	
380-155464-1 MSD	Halawa Shaft Viewing Pool	Total/NA	Water	533	

Analysis Batch: 158308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-155464-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	158202
380-155464-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	533	158202
MBL 380-158202/11-A	Method Blank	Total/NA	Water	533	158202
LCS 380-158202/13-A	Lab Control Sample	Total/NA	Water	533	158202
MRL 380-158202/12-A	Lab Control Sample	Total/NA	Water	533	158202
380-155464-1 MS	Halawa Shaft Viewing Pool	Total/NA	Water	533	158202
380-155464-1 MSD	Halawa Shaft Viewing Pool	Total/NA	Water	533	158202

Lab Chronicle

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

Job ID: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-1

Date Collected: 06/10/25 10:00

Matrix: Water

Date Received: 06/13/25 10:04

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			158202	E2HD	EA POM	06/16/25 17:10
Total/NA	Analysis	533		1	158308	SZ9R	EA POM	06/17/25 10:27
Total/NA	Prep	537.1 DW			157961	E9PK	EA POM	06/14/25 16:54
Total/NA	Analysis	537.1		1	158003	SZ9R	EA POM	06/15/25 21:06

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-155464-2

Date Collected: 06/10/25 10:00

Matrix: Water

Date Received: 06/13/25 10:04

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			158202	E2HD	EA POM	06/16/25 17:10
Total/NA	Analysis	533		1	158308	SZ9R	EA POM	06/17/25 11:53
Total/NA	Prep	537.1 DW			157961	E9PK	EA POM	06/14/25 16:54
Total/NA	Analysis	537.1		1	158003	SZ9R	EA POM	06/15/25 21:27

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: 380-155464-1
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
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Method Summary

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

Job ID: 380-155464-1
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: 380-155464-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-155464-1	Halawa Shaft Viewing Pool	Water	06/10/25 10:00	06/13/25 10:04
380-155464-2	FB: Halawa Shaft Viewing Pool	Water	06/10/25 10:00	06/13/25 10:04

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- 16
- 17

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-155464-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 155464

List Number: 1

Creator: Sanchez Velasquez, Gustavo

List Source: Eurofins Eaton Analytical Pomona

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