

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

380-163589-1

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: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
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: 380-163589-1

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Job Narrative 380-163589-1

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 7/31/2025 9:35 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 1.0°C.

PFAS

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

Detection Summary

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-163589-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.0		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK

Lab Sample ID: 380-163589-2

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: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-163589-1

Date Collected: 07/29/25 09:35

Matrix: Water

Date Received: 07/31/25 09:35

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		08/01/25 13:17	08/02/25 11:36	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:36	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C6 PFDA	96		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C5 PFHxA	94		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C4 PFHpA	92		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C8 PFOA	94		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C9 PFNA	93		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C7 PFUnA	98		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C2 PFDoA	102		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C4 PFBA	98		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C5 PFPeA	96		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C3 PFBS	108		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C3 PFHxS	114		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C8 PFOS	106		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C2-4:2-FTS	113		50 - 200	08/01/25 13:17	08/02/25 11:36	1
13C2-6:2-FTS	99		50 - 200	08/01/25 13:17	08/02/25 11:36	1

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Client Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-163589-1

Date Collected: 07/29/25 09:35

Matrix: Water

Date Received: 07/31/25 09:35

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-8:2-FTS	98		50 - 200	08/01/25 13:17	08/02/25 11:36	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		08/02/25 05:23	08/03/25 13:05	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluorohexanesulfonic acid (PFHxS)	4.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	100		70 - 130			08/02/25 05:23	08/03/25 13:05	1
13C2 PFHxA	104		70 - 130			08/02/25 05:23	08/03/25 13:05	1
13C2 PFDA	107		70 - 130			08/02/25 05:23	08/03/25 13:05	1
13C3-GenX	110		70 - 130			08/02/25 05:23	08/03/25 13:05	1

Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK

Lab Sample ID: 380-163589-2

Date Collected: 07/29/25 09:35

Matrix: Water

Date Received: 07/31/25 09:35

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		08/01/25 13:17	08/02/25 11:46	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK

Lab Sample ID: 380-163589-2

Date Collected: 07/29/25 09:35

Matrix: Water

Date Received: 07/31/25 09:35

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/01/25 13:17	08/02/25 11:46	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C6 PFDA	105		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C5 PFHxA	107		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C4 PFHpA	105		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C8 PFOA	106		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C9 PFNA	105		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C7 PFUnA	101		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C2 PFDoA	103		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C4 PFBA	103		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C5 PFPeA	107		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C3 PFBS	112		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C3 PFHxS	107		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C8 PFOS	103		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C2-4:2-FTS	110		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C2-6:2-FTS	95		50 - 200	08/01/25 13:17	08/02/25 11:46	1
13C2-8:2-FTS	92		50 - 200	08/01/25 13:17	08/02/25 11:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK

Lab Sample ID: 380-163589-2

Date Collected: 07/29/25 09:35

Matrix: Water

Date Received: 07/31/25 09:35

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/02/25 05:23	08/03/25 13:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	101		70 - 130	08/02/25 05:23	08/03/25 13:15	1
13C2 PFHxA	111		70 - 130	08/02/25 05:23	08/03/25 13:15	1
13C2 PFDA	114		70 - 130	08/02/25 05:23	08/03/25 13:15	1
13C3-GenX	113		70 - 130	08/02/25 05:23	08/03/25 13:15	1

Action Limit Summary

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-163589-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.4		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	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)	3.5		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)	4.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK

Lab Sample ID: 380-163589-2

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: 380-163589-1
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)
380-163589-1	HALAWA SHAFT VIEWING POOL	100	104	107	110
380-163589-2	HALAWA SHAFT VIEWING POOL BLANK	101	111	114	113
380-163599-B-1-A MS	Matrix Spike	102	113	115	116
380-163599-B-1-B MSD	Matrix Spike Duplicate	101	111	114	115
LCS 380-166445/24-A	Lab Control Sample	93	104	111	103
MBL 380-166445/22-A	Method Blank	106	110	114	115
MRL 380-166445/23-A	Lab Control Sample	94	104	111	103
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: 380-163589-1
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)
380-163589-1	HALAWA SHAFT VIEWING POOL	91	96	94	92	94	93	98	102
380-163589-2	HALAWA SHAFT VIEWING POOL BLANK	76	105	107	105	106	105	101	103
380-163599-A-1-B MS	Matrix Spike	68	77	73	74	74	73	81	85
380-163599-A-1-C MSD	Matrix Spike Duplicate	48 *5-	40 *5-	51	49 *5-	49 *5-	42 *5-	44 *5-	50
LCS 380-166354/22-A	Lab Control Sample	86	109	107	107	109	107	109	107
MBL 380-166354/20-A	Method Blank	86	104	106	104	107	102	101	102
MRL 380-166354/21-A	Lab Control Sample	74	107	110	107	109	106	107	104

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)
380-163589-1	HALAWA SHAFT VIEWING POOL	98	96	108	114	106	113	99	98
380-163589-2	HALAWA SHAFT VIEWING POOL BLANK	103	107	112	107	103	110	95	92
380-163599-A-1-B MS	Matrix Spike	72	71	106	109	102	97	94	94
380-163599-A-1-C MSD	Matrix Spike Duplicate	54	53	108	105	101	102	97	95
LCS 380-166354/22-A	Lab Control Sample	107	105	107	109	107	97	96	94
MBL 380-166354/20-A	Method Blank	104	102	107	108	105	99	95	90
MRL 380-166354/21-A	Lab Control Sample	107	103	110	112	106	106	96	92

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: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-166354/20-A

Matrix: Water

Analysis Batch: 166454

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 166354

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		08/01/25 13:17	08/02/25 09:58	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	86		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C6 PFDA	104		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C5 PFHxA	106		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C4 PFHpA	104		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C8 PFOA	107		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C9 PFNA	102		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C7 PFUnA	101		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C2 PFDoA	102		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C4 PFBA	104		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C5 PFPeA	102		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C3 PFBS	107		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C3 PFHxS	108		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C8 PFOS	105		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C2-4:2-FTS	99		50 - 200	08/01/25 13:17	08/02/25 09:58	1
13C2-6:2-FTS	95		50 - 200	08/01/25 13:17	08/02/25 09:58	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-166354/20-A
Matrix: Water
Analysis Batch: 166454

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 166354

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-8:2-FTS	90		50 - 200	08/01/25 13:17	08/02/25 09:58	1

Lab Sample ID: LCS 380-166354/22-A
Matrix: Water
Analysis Batch: 166454

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 166354

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	60.2	58.2		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	60.2	58.0		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	60.3		ng/L		100	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	55.1		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	57.8		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	57.6		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	58.5		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	60.3		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	57.5		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	60.0		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	60.2	57.6		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	59.6		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	59.5		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	58.4		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	59.5		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	60.5		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	62.8		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	59.8		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	59.9		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.2	56.4		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	57.0		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	59.0		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	58.4		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	58.2		ng/L		97	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.2	56.8		ng/L		94	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	86		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	107		50 - 200

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-166354/22-A

Matrix: Water

Analysis Batch: 166454

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166354

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C4 PFHpA	107		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	107		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	105		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	97		50 - 200
13C2-6:2-FTS	96		50 - 200
13C2-8:2-FTS	94		50 - 200

Lab Sample ID: MRL 380-166354/21-A

Matrix: Water

Analysis Batch: 166454

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166354

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.10	J	ng/L		105	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.97	J	ng/L		99	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.11	J	ng/L		105	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.92	J	ng/L		96	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.95	J	ng/L		98	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.05	J	ng/L		102	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.10	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.04	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.16	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.16	J	ng/L		108	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluoro (2-ethoxyethane) sulfoni acid (PFEEESA)	2.00	1.97	J	ng/L		98	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-166354/21-A

Matrix: Water

Analysis Batch: 166454

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166354

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.09	J	ng/L		104	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.93	J	ng/L		96	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	74		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	110		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	107		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	103		50 - 200
13C3 PFBS	110		50 - 200
13C3 PFHxS	112		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	106		50 - 200
13C2-6:2-FTS	96		50 - 200
13C2-8:2-FTS	92		50 - 200

Lab Sample ID: 380-163599-A-1-B MS

Matrix: Water

Analysis Batch: 166454

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 166354

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		121	120		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	117		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	111		ng/L		92	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	112		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	117		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	114		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	116		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	120		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	115		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	116		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	118		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	122		ng/L		101	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-163599-A-1-B MS

Matrix: Water

Analysis Batch: 166454

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 166354

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanoic acid (PFOA)	<2.0		121	118		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	116		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	116		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	116		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	115		ng/L		95	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		121	108		ng/L		90	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	112		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	111		ng/L		92	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	115		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	119		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	120		ng/L		100	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	113		ng/L		94	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	MS Limits
13C3 HFPO-DA	68		50 - 200
13C6 PFDA	77		50 - 200
13C5 PFHxA	73		50 - 200
13C4 PFHpA	74		50 - 200
13C8 PFOA	74		50 - 200
13C9 PFNA	73		50 - 200
13C7 PFUnA	81		50 - 200
13C2 PFDoA	85		50 - 200
13C4 PFBA	72		50 - 200
13C5 PFPeA	71		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	102		50 - 200
13C2-4:2-FTS	97		50 - 200
13C2-6:2-FTS	94		50 - 200
13C2-8:2-FTS	94		50 - 200

Lab Sample ID: 380-163599-A-1-C MSD

Matrix: Water

Analysis Batch: 166454

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 166354

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		120	120		ng/L		100	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	118		ng/L		98	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	112	*5-	ng/L		93	70 - 130	1	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-163599-A-1-C MSD

Matrix: Water

Analysis Batch: 166454

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 166354

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		120	109	*5-	ng/L		91	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	117		ng/L		97	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		120	115	*5-	ng/L		95	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	117		ng/L		97	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	121	*5-	ng/L		100	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	116		ng/L		96	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	119		ng/L		99	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		120	119	*5-	ng/L		99	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	122		ng/L		101	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		120	118	*5-	ng/L		98	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	118	*5-	ng/L		98	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		120	115		ng/L		95	70 - 130	4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	117		ng/L		97	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	116		ng/L		96	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	115		ng/L		95	70 - 130	0	30
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		120	114		ng/L		95	70 - 130	6	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	109		ng/L		91	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	106		ng/L		88	70 - 130	5	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	110		ng/L		91	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	114		ng/L		94	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	119		ng/L		99	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	115		ng/L		95	70 - 130	1	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	48	*5-	50 - 200
13C6 PFDA	40	*5-	50 - 200
13C5 PFHxA	51		50 - 200
13C4 PFHpA	49	*5-	50 - 200
13C8 PFOA	49	*5-	50 - 200
13C9 PFNA	42	*5-	50 - 200
13C7 PFUnA	44	*5-	50 - 200
13C2 PFDoA	50		50 - 200
13C4 PFBA	54		50 - 200
13C5 PFPeA	53		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	105		50 - 200
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	102		50 - 200
13C2-6:2-FTS	97		50 - 200
13C2-8:2-FTS	95		50 - 200

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QC Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-166445/22-A

Matrix: Water

Analysis Batch: 166500

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 166445

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		08/02/25 05:23	08/03/25 11:46	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
Perfluorotridecanoic acid (PFTTrDA)	<0.36		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/02/25 05:23	08/03/25 11:46	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130	08/02/25 05:23	08/03/25 11:46	1
13C2 PFHxA	110		70 - 130	08/02/25 05:23	08/03/25 11:46	1
13C2 PFDA	114		70 - 130	08/02/25 05:23	08/03/25 11:46	1
13C3-GenX	115		70 - 130	08/02/25 05:23	08/03/25 11:46	1

Lab Sample ID: LCS 380-166445/24-A

Matrix: Water

Analysis Batch: 166500

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166445

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	23.2		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	26.3		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	25.2		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	23.9		ng/L		96	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	22.6		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	24.0		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	24.1		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	25.8		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	25.2		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	28.1		ng/L		112	70 - 130

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QC Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-166445/24-A

Matrix: Water

Analysis Batch: 166500

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166445

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid (PFBS)	25.1	25.4		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	23.8		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	25.1	24.2		ng/L		97	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	23.4		ng/L		93	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.1	24.8		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	24.7		ng/L		99	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	23.4		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	23.8		ng/L		95	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	93		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	103		70 - 130

Lab Sample ID: MRL 380-166445/23-A

Matrix: Water

Analysis Batch: 166500

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166445

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.92	J	ng/L		96	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.36	J	ng/L		118	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.14	J	ng/L		107	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.06	J	ng/L		103	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.48	J	ng/L		124	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.09	J	ng/L		104	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.07	J	ng/L		104	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.13	J	ng/L		107	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.10	J	ng/L		105	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-166445/23-A

Matrix: Water

Analysis Batch: 166500

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166445

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.06	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.01	J	ng/L		100	50 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
d5-NEtFOSAA	94		70 - 130				
13C2 PFHxA	104		70 - 130				
13C2 PFDA	111		70 - 130				
13C3-GenX	103		70 - 130				

Lab Sample ID: 380-163599-B-1-A MS

Matrix: Water

Analysis Batch: 166500

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 166445

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	20.1		ng/L		80	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	21.6		ng/L		86	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	20.0		ng/L		79	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	20.1		ng/L		80	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	19.1		ng/L		76	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	20.7		ng/L		82	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	19.4		ng/L		77	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.2	20.8		ng/L		83	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.2	20.6		ng/L		82	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	21.8		ng/L		87	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	21.3		ng/L		85	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	20.4		ng/L		81	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.2	19.8		ng/L		79	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	17.9		ng/L		71	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	20.1		ng/L		80	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	19.6		ng/L		78	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	18.9		ng/L		75	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	20.5		ng/L		81	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-163599-B-1-A MS
Matrix: Water
Analysis Batch: 166500

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 166445

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
13C3-GenX	116		70 - 130

Lab Sample ID: 380-163599-B-1-B MSD
Matrix: Water
Analysis Batch: 166500

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 166445

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		25.1	20.4		ng/L		81	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	21.0		ng/L		84	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	20.3		ng/L		81	70 - 130	2	30
N-methylperfluorooctanesulfonamide doacetic acid (NMeFOSAA)	<2.0		25.1	20.8		ng/L		83	70 - 130	3	30
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		25.1	20.3		ng/L		81	70 - 130	6	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	20.8		ng/L		83	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	19.6		ng/L		78	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	21.2		ng/L		85	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	20.3		ng/L		81	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	21.9		ng/L		87	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	21.0		ng/L		84	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	2.0		25.1	20.5		ng/L		81	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	20.1		ng/L		80	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	18.2		ng/L		73	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	19.7		ng/L		78	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	19.6		ng/L		78	70 - 130	0	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	19.0		ng/L		76	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	21.3		ng/L		85	70 - 130	4	30

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
d5-NEtFOSAA	101		70 - 130
13C2 PFHxA	111		70 - 130
13C2 PFDA	114		70 - 130
13C3-GenX	115		70 - 130

QC Association Summary

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 166354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-163589-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-163589-2	HALAWA SHAFT VIEWING POOL BLANK	Total/NA	Water	533	
MBL 380-166354/20-A	Method Blank	Total/NA	Water	533	
LCS 380-166354/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-166354/21-A	Lab Control Sample	Total/NA	Water	533	
380-163599-A-1-B MS	Matrix Spike	Total/NA	Water	533	
380-163599-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 166445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-163589-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-163589-2	HALAWA SHAFT VIEWING POOL BLANK	Total/NA	Water	537.1 DW	
MBL 380-166445/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-166445/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-166445/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-163599-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-163599-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 166454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-163589-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	166354
380-163589-2	HALAWA SHAFT VIEWING POOL BLANK	Total/NA	Water	533	166354
MBL 380-166354/20-A	Method Blank	Total/NA	Water	533	166354
LCS 380-166354/22-A	Lab Control Sample	Total/NA	Water	533	166354
MRL 380-166354/21-A	Lab Control Sample	Total/NA	Water	533	166354
380-163599-A-1-B MS	Matrix Spike	Total/NA	Water	533	166354
380-163599-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	166354

Analysis Batch: 166500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-163589-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	166445
380-163589-2	HALAWA SHAFT VIEWING POOL BLANK	Total/NA	Water	537.1	166445
MBL 380-166445/22-A	Method Blank	Total/NA	Water	537.1	166445
LCS 380-166445/24-A	Lab Control Sample	Total/NA	Water	537.1	166445
MRL 380-166445/23-A	Lab Control Sample	Total/NA	Water	537.1	166445
380-163599-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	166445
380-163599-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	166445

Lab Chronicle

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

Job ID: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-163589-1

Date Collected: 07/29/25 09:35

Matrix: Water

Date Received: 07/31/25 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			166354	N8NE	EA POM	08/01/25 13:17
Total/NA	Analysis	533		1	166454	Y5FM	EA POM	08/02/25 11:36
Total/NA	Prep	537.1 DW			166445	E9PK	EA POM	08/02/25 05:23
Total/NA	Analysis	537.1		1	166500	M7ML	EA POM	08/03/25 13:05

Client Sample ID: HALAWA SHAFT VIEWING POOL BLANK

Lab Sample ID: 380-163589-2

Date Collected: 07/29/25 09:35

Matrix: Water

Date Received: 07/31/25 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			166354	N8NE	EA POM	08/01/25 13:17
Total/NA	Analysis	533		1	166454	Y5FM	EA POM	08/02/25 11:46
Total/NA	Prep	537.1 DW			166445	E9PK	EA POM	08/02/25 05:23
Total/NA	Analysis	537.1		1	166500	M7ML	EA POM	08/03/25 13:15

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: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Laboratory: Eurofins Eaton Analytical Pomona

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

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Method Summary

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

Job ID: 380-163589-1
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: 380-163589-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-163589-1	HALAWA SHAFT VIEWING POOL	Water	07/29/25 09:35	07/31/25 09:35	Hawaii
380-163589-2	HALAWA SHAFT VIEWING POOL BLANK	Water	07/29/25 09:35	07/31/25 09:35	Hawaii



380-163589 CQC

Client Information		Sampler Jason Rakofsky		Lab PM: Arada, Rachelle		Carrier Tracking (Note): 380-27941-2757.2	
Client Contact: Kirk Iwamoto		Phone: +1 808 748 5840		E-Mail: Rachelle.Arada@teleunomus.com		State of Origin: Page 2 of 2	
City & County of Honolulu Address: 6330 South Beretania Street, Chemistry Lab City: Honolulu State, Zip: HI, 96843 Phone: 808-748-5840 (tel) Email: kiwamoto@hbws.org Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site: SSOW#:		PWSID: RUSH TAT Requested (days): Compliance Project: Δ No PO #: C20525101 exp 05312023 WO #: 38001111 Project #: SSOW#:		Due Date Requested: Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) SUBCONTRACT - 626 PAH Phyla LL (EAL) + TICs 8015B_GRO_LL - (MOD) GRO 8015B_DRO_LL_CS - HNL Ranges: C10-C24/C24-C36/C8-C18 825.2_PREC - (MOD) 825plus PLUS TICs 837.1_DW_PREC - 837.1 Full List 833 - All Analyses		Analysis Requested 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 - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Sample Identification		Sample Date 29-Jul-2025 29-Jul-2025		Sample Time 0935 G G		Sample Type (C=Comp, G=grab) Matrix (Water, Sediment, Other)	
Halawa Shaft Viewing Pool Halawa Shaft Viewing Pool Blank		Water Water		G G		Preservation Code: 33 11	
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		Special Instructions/Note: Special Instructions/QC Requirements.	
Empty Kit Relinquished by:		Date: 7/30/25 1:00 Date/Time: 7/30/25 1:00 Date/Time: 7/30/25 1:00 Date/Time: 7/30/25 1:00		Date: 7/30/25 09:35 Date/Time: 7/30/25 09:35 Date/Time: 7/30/25 09:35 Date/Time: 7/30/25 09:35		Method of Shipment: FEDEX 8831 9207 7893 Company: HBWS Company: HBWS Company: HBWS Company: HBWS	

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-163589-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 163589

List Number: 1

Creator: Edrosa, Rey

List Source: Eurofins Eaton Analytical Pomona

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