

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool
RUSH Weekly Red Hill

JOB NUMBER

380-239383-1

Eurofins 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 Drinking Water and Wastewater West, LLC Project Manager.

Compliance Statement

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

Authorization



Authorized for release by
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Definitions/Glossary

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

Job ID: 380-239383-1
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: 380-239383-1

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Job Narrative 380-239383-1

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

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

Receipt

The samples were received on 10/1/2026 10:00 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 1.4°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: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-1

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)	3.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.9		2.0	ng/L	1		EPA 537.1 V2	Total/NA

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-2

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: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-1

Date Collected: 09/29/26 09:30

Matrix: Drinking Water

Date Received: 10/01/26 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluorohexanesulfonic acid (PFHxS)	3.5		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluorooctanesulfonic acid (PFOS)	3.3		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 14:57	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C6 PFDA	110		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C5 PFHxA	105		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C4 PFHpA	102		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C8 PFOA	104		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C9 PFNA	110		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C7 PFUnA	109		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C2 PFDoA	111		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C4 PFBA	105		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C5 PFPeA	108		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C3 PFBS	102		50 - 200			10/02/26 15:43	10/03/26 14:57	1
13C3 PFHxS	100		50 - 200			10/02/26 15:43	10/03/26 14:57	1

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Client Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-1

Date Collected: 09/29/26 09:30

Matrix: Drinking Water

Date Received: 10/01/26 10:00

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	104		50 - 200	10/02/26 15:43	10/03/26 14:57	1
13C2-4:2-FTS	104		50 - 200	10/02/26 15:43	10/03/26 14:57	1
13C2-6:2-FTS	96		50 - 200	10/02/26 15:43	10/03/26 14:57	1
13C2-8:2-FTS	103		50 - 200	10/02/26 15:43	10/03/26 14:57	1

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorohexanesulfonic acid (PFHxS)	3.9		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	111		70 - 130			10/02/26 07:00	10/03/26 00:29	1
13C2 PFHxA	88		70 - 130			10/02/26 07:00	10/03/26 00:29	1
13C2 PFDA	98		70 - 130			10/02/26 07:00	10/03/26 00:29	1
13C3-GenX	89		70 - 130			10/02/26 07:00	10/03/26 00:29	1

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-2

Date Collected: 09/29/26 09:30

Matrix: Water

Date Received: 10/01/26 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1

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Client Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-2

Date Collected: 09/29/26 09:30

Matrix: Water

Date Received: 10/01/26 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/02/26 15:43	10/03/26 15:06	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	105		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C6 PFDA	111		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C5 PFHxA	103		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C4 PFHpA	105		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C8 PFOA	108		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C9 PFNA	111		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C7 PFUnA	109		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C2 PFDoA	109		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C4 PFBA	107		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C5 PFPeA	106		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C3 PFBS	98		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C3 PFHxS	102		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C8 PFOS	102		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C2-4:2-FTS	91		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C2-6:2-FTS	88		50 - 200			10/02/26 15:43	10/03/26 15:06	1
13C2-8:2-FTS	99		50 - 200			10/02/26 15:43	10/03/26 15:06	1

Eurofins Pomona

Client Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-2

Date Collected: 09/29/26 09:30

Matrix: Water

Date Received: 10/01/26 10:00

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/02/26 07:00	10/03/26 00:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	105		70 - 130			10/02/26 07:00	10/03/26 00:38	1
13C2 PFHxA	94		70 - 130			10/02/26 07:00	10/03/26 00:38	1
13C2 PFDA	112		70 - 130			10/02/26 07:00	10/03/26 00:38	1
13C3-GenX	90		70 - 130			10/02/26 07:00	10/03/26 00:38	1

Action Limit Summary

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-1

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)	3.3		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	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.9		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-2

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	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Surrogate Summary

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)							
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)				
380-239383-1	HALAWA SHAFT VIEWING POOL	111	88	98	89				
Surrogate Legend									
d5NEFOS = d5-NEtFOSAA									
PFHxA = 13C2 PFHxA									
PFDA = 13C2 PFDA									
GenX = 13C3-GenX									

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)							
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)				
380-239367-P-1-A MS	Matrix Spike	100	86	99	95				
380-239367-Q-1-A MSD	Matrix Spike Duplicate	96	78	98	87				
380-239383-2	FB: HALAWA SHAFT VIEWING POOL	105	94	112	90				
LCS 380-255998/22-A	Lab Control Sample	95	86	86	82				
MBL 380-255998/20-A	Method Blank	107	96	104	91				
MRL 380-255998/21-A	Lab Control Sample	99	91	109	89				
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: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Matrix: Drinking Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-239383-1	HALAWA SHAFT VIEWING POOL	94	110	105	102	104	110	109	111

		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)
380-239383-1	HALAWA SHAFT VIEWING POOL	105	108	102	100	104	104	96	103

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

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)
380-239251-M-1-A MS	Matrix Spike	114	111	110	111	106	107	110	112
380-239251-N-1-A MSD	Matrix Spike Duplicate	106	107	109	108	107	106	103	108
380-239383-2	FB: HALAWA SHAFT VIEWING POOL	105	111	103	105	108	111	109	109
LCS 380-256104/22-A	Lab Control Sample	102	107	106	111	107	101	105	108
MBL 380-256104/20-A	Method Blank	91	105	101	105	107	103	105	106
MRL 380-256104/21-A	Lab Control Sample	92	104	101	101	103	101	99	101

		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)
380-239251-M-1-A MS	Matrix Spike	109	116	104	110	104	118	104	100
380-239251-N-1-A MSD	Matrix Spike Duplicate	104	123	103	108	105	121	105	100
380-239383-2	FB: HALAWA SHAFT VIEWING POOL	107	106	98	102	102	91	88	99
LCS 380-256104/22-A	Lab Control Sample	108	106	104	107	103	97	93	95
MBL 380-256104/20-A	Method Blank	103	104	105	109	105	97	98	99
MRL 380-256104/21-A	Lab Control Sample	103	101	104	108	107	94	89	95

Surrogate Legend

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

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Isotope Dilution Summary

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- 13C7PUA = 13C7 PFUnA
- PFD_oA = 13C2 PFD_oA
- PFBA = 13C4 PFBA
- PFP_eA = 13C5 PFP_eA
- C3PFBS = 13C3 PFBS
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- 42FTS = 13C2-4:2-FTS
- 62FTS = 13C2-6:2-FTS
- 82FTS = 13C2-8:2-FTS

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QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-256104/20-A

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 256104

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<0.29		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<0.29		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.37		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.24		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		10/02/26 15:43	10/03/26 11:15	1
Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	91		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C6 PFDA	105		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C5 PFHxA	101		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C4 PFHpA	105		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C8 PFOA	107		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C9 PFNA	103		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C7 PFUnA	105		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C2 PFDoA	106		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C4 PFBA	103		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C5 PFPeA	104		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C3 PFBS	105		50 - 200			10/02/26 15:43	10/03/26 11:15	1
¹³ C3 PFHxS	109		50 - 200			10/02/26 15:43	10/03/26 11:15	1

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QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-256104/20-A

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 256104

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	105		50 - 200	10/02/26 15:43	10/03/26 11:15	1
13C2-4:2-FTS	97		50 - 200	10/02/26 15:43	10/03/26 11:15	1
13C2-6:2-FTS	98		50 - 200	10/02/26 15:43	10/03/26 11:15	1
13C2-8:2-FTS	99		50 - 200	10/02/26 15:43	10/03/26 11:15	1

Lab Sample ID: LCS 380-256104/22-A

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256104

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	58.9	52.6		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	58.9	58.5		ng/L		99	70 - 130
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	58.9	56.1		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	58.9	54.9		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	58.9	57.3		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	58.9	55.9		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDaA)	58.9	56.1		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	58.9	55.5		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	58.9	57.1		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	58.9	55.6		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	58.9	58.9		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	58.9	58.3		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	58.9	56.7		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	58.9	55.4		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	58.9	57.9		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	58.9	59.3		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	58.9	55.7		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	58.9	58.6		ng/L		99	70 - 130
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	58.9	52.1		ng/L		88	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	58.9	55.9		ng/L		95	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	58.9	55.9		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	58.9	57.1		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	58.9	56.5		ng/L		96	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	58.9	59.3		ng/L		101	70 - 130

Eurofins Pomona

QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-256104/22-A

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256104

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	58.9	53.1		ng/L		90	70 - 130
	LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	102		50 - 200				
13C6 PFDA	107		50 - 200				
13C5 PFHxA	106		50 - 200				
13C4 PFHpA	111		50 - 200				
13C8 PFOA	107		50 - 200				
13C9 PFNA	101		50 - 200				
13C7 PFUnA	105		50 - 200				
13C2 PFDoA	108		50 - 200				
13C4 PFBA	108		50 - 200				
13C5 PFPeA	106		50 - 200				
13C3 PFBS	104		50 - 200				
13C3 PFHxS	107		50 - 200				
13C8 PFOS	103		50 - 200				
13C2-4:2-FTS	97		50 - 200				
13C2-6:2-FTS	93		50 - 200				
13C2-8:2-FTS	95		50 - 200				

Lab Sample ID: MRL 380-256104/21-A

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256104

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	1.96	J	ng/L		100	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.96	2.11	J	ng/L		108	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	2.03	J	ng/L		103	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.96	1.94	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	1.91	J	ng/L		97	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	2.09	J	ng/L		106	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	2.17	J	ng/L		110	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	2.04	J	ng/L		104	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.96	2.04	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	1.96	J	ng/L		100	50 - 150
Perfluorononanoic acid (PFNA)	1.96	2.07	J	ng/L		105	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.96	2.07	J	ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	2.15	J	ng/L		110	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	2.05	J	ng/L		104	50 - 150
Perfluorobutanoic acid (PFBA)	1.96	2.21	J	ng/L		113	50 - 150

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QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-256104/21-A

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256104

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.96	2.41	J	ng/L		123	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.96	2.05	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.96	2.31	J	ng/L		118	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.96	1.96	J	ng/L		100	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	1.96	2.10	J	ng/L		107	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.96	1.93	J	ng/L		98	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.96	1.98	J	ng/L		101	50 - 150
Perfluoropentanoic acid (PFPeA)	1.96	2.04	J	ng/L		104	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.96	2.04	J	ng/L		104	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.96	1.92	J	ng/L		98	50 - 150

Isotope Dilution	%Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	92		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	101		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	101		50 - 200
13C7 PFUnA	99		50 - 200
13C2 PFDoA	101		50 - 200
13C4 PFBA	103		50 - 200
13C5 PFPeA	101		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	94		50 - 200
13C2-6:2-FTS	89		50 - 200
13C2-8:2-FTS	95		50 - 200

Lab Sample ID: 380-239251-M-1-A MS

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 256104

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		118	99.5		ng/L		84	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		118	115		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	111		ng/L		94	70 - 130

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QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-239251-M-1-A MS

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 256104

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		118	103		ng/L		87	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	113		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		118	109		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		118	112		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		118	109		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	110		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		118	115		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		118	111		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	112		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		118	115		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		118	107		ng/L		90	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		118	115		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	112		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	106		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	111		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		118	112		ng/L		95	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		118	115		ng/L		97	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	111		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	120		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		118	121		ng/L		102	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	112		ng/L		95	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	107		ng/L		91	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	114		50 - 200
13C6 PFDA	111		50 - 200
13C5 PFHxA	110		50 - 200
13C4 PFHpA	111		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	110		50 - 200
13C2 PFDoA	112		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	116		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	110		50 - 200
13C8 PFOS	104		50 - 200

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QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-239251-M-1-A MS

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 256104

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	118		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: 380-239251-N-1-A MSD

Matrix: Water

Analysis Batch: 256199

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 256104

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		118	95.0		ng/L		80	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		118	111		ng/L		94	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	110		ng/L		93	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		118	103		ng/L		88	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	113		ng/L		95	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		118	112		ng/L		95	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		118	112		ng/L		95	70 - 130	0	30
Perfluorooheptanoic acid (PFHpA)	<2.0		118	114		ng/L		96	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	109		ng/L		93	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		118	109		ng/L		92	70 - 130	6	30
Perfluorononanoic acid (PFNA)	<2.0		118	109		ng/L		92	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	109		ng/L		93	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		118	110		ng/L		93	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		118	115		ng/L		97	70 - 130	7	30
Perfluorobutanoic acid (PFBA)	<2.0		118	117		ng/L		99	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	112		ng/L		95	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	105		ng/L		89	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	116		ng/L		98	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		118	101		ng/L		86	70 - 130	10	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		118	109		ng/L		92	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	98.4		ng/L		83	70 - 130	12	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	109		ng/L		92	70 - 130	10	30
Perfluoropentanoic acid (PFPeA)	<2.0		118	109		ng/L		92	70 - 130	11	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	112		ng/L		94	70 - 130	0	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	109		ng/L		93	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	106		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	109		50 - 200
13C4 PFHpA	108		50 - 200
13C8 PFOA	107		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	103		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	123		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	121		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	100		50 - 200

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Lab Sample ID: MBL 380-255998/20-A
Matrix: Water
Analysis Batch: 256154

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 255998

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Perfluorotridecanoic acid (PFTTrDA)	<0.35		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.29		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		10/02/26 07:00	10/02/26 21:27	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	107		70 - 130			10/02/26 07:00	10/02/26 21:27	1
13C2 PFHxA	96		70 - 130			10/02/26 07:00	10/02/26 21:27	1
13C2 PFDA	104		70 - 130			10/02/26 07:00	10/02/26 21:27	1

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QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MBL 380-255998/20-A

Matrix: Water

Analysis Batch: 256154

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 255998

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	91		70 - 130	10/02/26 07:00	10/02/26 21:27	1

Lab Sample ID: LCS 380-255998/22-A

Matrix: Water

Analysis Batch: 256154

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255998

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	49.2	41.4		ng/L		84	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	49.2	46.5		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.2	54.3		ng/L		110	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.2	45.9		ng/L		93	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.2	48.4		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	49.2	42.4		ng/L		86	70 - 130
Perfluorododecanoic acid (PFDoA)	49.2	53.6		ng/L		109	70 - 130
Perfluorooctanoic acid (PFOA)	49.2	49.5		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	49.2	47.9		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.2	49.9		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.2	43.9		ng/L		89	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.2	44.6		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	49.2	45.9		ng/L		93	70 - 130
Perfluorotetradecanoic acid (PFTA)	49.2	40.1		ng/L		81	70 - 130
Perfluorotridecanoic acid (PFTrDA)	49.2	50.6		ng/L		103	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	49.2	47.0		ng/L		95	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.2	44.5		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.2	44.1		ng/L		90	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	95		70 - 130
13C2 PFHxA	86		70 - 130
13C2 PFDA	86		70 - 130
13C3-GenX	82		70 - 130

QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MRL 380-255998/21-A

Matrix: Water

Analysis Batch: 256154

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255998

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	1.96	1.96	J	ng/L		100	50 - 150
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	1.96	2.07	J	ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	2.70	J	ng/L		137	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.96	1.97	J	ng/L		100	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.96	2.20	J	ng/L		112	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	1.98	J	ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	2.44	J	ng/L		124	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	2.15	J	ng/L		109	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	1.95	J	ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.96	2.27	J	ng/L		116	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	2.05	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	2.19	J	ng/L		111	50 - 150
Perfluorononanoic acid (PFNA)	1.96	2.36	J	ng/L		120	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.96	1.90	J	ng/L		97	50 - 150
Perfluorotridecanoic acid (PFTrDA)	1.96	2.49	J	ng/L		127	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.96	2.10	J	ng/L		107	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	1.95	J	ng/L		99	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	1.96	J	ng/L		100	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	99		70 - 130
13C2 PFHxA	91		70 - 130
13C2 PFDA	109		70 - 130
13C3-GenX	89		70 - 130

Lab Sample ID: 380-239367-P-1-A MS

Matrix: Water

Analysis Batch: 256154

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 255998

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		49.3	47.1		ng/L		95	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorooctanesulfonic acid (PFOS)	<2.0		49.3	47.4		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		49.3	57.5		ng/L		117	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.3	46.7		ng/L		95	70 - 130

Eurofins Pomona

QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-239367-P-1-A MS

Matrix: Water

Analysis Batch: 256154

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 255998

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits		
	Result	Qualifier	Added	Result	Qualifier			%Rec			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		49.3	50.1		ng/L		102	70 - 130		
Perfluorohexanoic acid (PFHxA)	<2.0		49.3	45.0		ng/L		89	70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		49.3	53.9		ng/L		109	70 - 130		
Perfluorooctanoic acid (PFOA)	<2.0		49.3	53.8		ng/L		108	70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		49.3	45.9		ng/L		93	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)	<2.0		49.3	50.5		ng/L		102	70 - 130		
Perfluorobutanesulfonic acid (PFBS)	<2.0		49.3	45.4		ng/L		91	70 - 130		
Perfluoroheptanoic acid (PFHpA)	<2.0		49.3	47.5		ng/L		96	70 - 130		
Perfluorononanoic acid (PFNA)	<2.0		49.3	50.2		ng/L		102	70 - 130		
Perfluorotetradecanoic acid (PFTA)	<2.0		49.3	45.5		ng/L		92	70 - 130		
Perfluorotridecanoic acid (PFTrDA)	<2.0		49.3	45.8		ng/L		93	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.3	47.6		ng/L		97	70 - 130		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.3	45.5		ng/L		92	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.3	47.9		ng/L		97	70 - 130		

Lab Sample ID: 380-239367-Q-1-A MSD

Matrix: Water

Analysis Batch: 256154

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 255998

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		49.2	45.3		ng/L		92	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		49.2	48.1		ng/L		98	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		49.2	56.6		ng/L		115	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.2	46.8		ng/L		95	70 - 130	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		49.2	50.2		ng/L		102	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		49.2	43.3		ng/L		86	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		49.2	51.1		ng/L		104	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	<2.0		49.2	49.0		ng/L		98	70 - 130	9	30
Perfluorodecanoic acid (PFDA)	<2.0		49.2	48.7		ng/L		99	70 - 130	6	30

Eurofins Pomona

QC Sample Results

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-239367-Q-1-A MSD

Matrix: Water

Analysis Batch: 256154

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 255998

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		49.2	51.4		ng/L		104	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		49.2	46.1		ng/L		92	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		49.2	45.5		ng/L		92	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		49.2	50.9		ng/L		103	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		49.2	45.7		ng/L		93	70 - 130	0	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		49.2	49.2		ng/L		100	70 - 130	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.2	47.3		ng/L		96	70 - 130	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.2	45.5		ng/L		93	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.2	45.6		ng/L		93	70 - 130	5	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	96		70 - 130								
13C2 PFHxA	78		70 - 130								
13C2 PFDA	98		70 - 130								
13C3-GenX	87		70 - 130								

QC Association Summary

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 255998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-239383-1	HALAWA SHAFT VIEWING POOL	Total/NA	Drinking Water	537.1 DW	
380-239383-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-255998/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-255998/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-255998/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-239367-P-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-239367-Q-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 256104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-239383-1	HALAWA SHAFT VIEWING POOL	Total/NA	Drinking Water	533	
380-239383-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-256104/20-A	Method Blank	Total/NA	Water	533	
LCS 380-256104/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-256104/21-A	Lab Control Sample	Total/NA	Water	533	
380-239251-M-1-A MS	Matrix Spike	Total/NA	Water	533	
380-239251-N-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 256154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-239383-1	HALAWA SHAFT VIEWING POOL	Total/NA	Drinking Water	EPA 537.1 V2	255998
380-239383-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	255998
MBL 380-255998/20-A	Method Blank	Total/NA	Water	EPA 537.1 V2	255998
LCS 380-255998/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	255998
MRL 380-255998/21-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	255998
380-239367-P-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	255998
380-239367-Q-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	255998

Analysis Batch: 256199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-239383-1	HALAWA SHAFT VIEWING POOL	Total/NA	Drinking Water	533	256104
380-239383-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	256104
MBL 380-256104/20-A	Method Blank	Total/NA	Water	533	256104
LCS 380-256104/22-A	Lab Control Sample	Total/NA	Water	533	256104
MRL 380-256104/21-A	Lab Control Sample	Total/NA	Water	533	256104
380-239251-M-1-A MS	Matrix Spike	Total/NA	Water	533	256104
380-239251-N-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	256104

Lab Chronicle

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-1

Date Collected: 09/29/26 09:30

Matrix: Drinking Water

Date Received: 10/01/26 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			256104	N8NE	EA POM	10/02/26 15:43
Total/NA	Analysis	533		1	256199	UKDT	EA POM	10/03/26 14:57
Total/NA	Prep	537.1 DW			255998	E9PK	EA POM	10/02/26 07:00
Total/NA	Analysis	EPA 537.1 V2		1	256154	UKDT	EA POM	10/03/26 00:29

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-239383-2

Date Collected: 09/29/26 09:30

Matrix: Water

Date Received: 10/01/26 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			256104	N8NE	EA POM	10/02/26 15:43
Total/NA	Analysis	533		1	256199	UKDT	EA POM	10/03/26 15:06
Total/NA	Prep	537.1 DW			255998	E9PK	EA POM	10/02/26 07:00
Total/NA	Analysis	EPA 537.1 V2		1	256154	UKDT	EA POM	10/03/26 00:38

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Laboratory: Eurofins Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-27

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Method Summary

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
EPA 537.1 V2	EPA 537.1 Ver. 2.0 March 2020	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

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

Job ID: 380-239383-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-239383-1	HALAWA SHAFT VIEWING POOL	Drinking Water	09/29/26 09:30	10/01/26 10:00	Hawaii
380-239383-2	FB: HALAWA SHAFT VIEWING POOL	Water	09/29/26 09:30	10/01/26 10:00	Hawaii

Eurofins Pomona
941 Corporate Center Drive
Pomona, CA 91768-2842
Phone (626) 386-1100

Chain of Custody Record



COC No:
Page 1 of 1
Lab #:

Carrier Tracking No(s):
State of Origin:

Lab Pk:
Lopez, Maria
E-Mail:
Maria.Lopez@eurofins.com

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Anion
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
Other:
NH4 Acetate

380-239383 COC

Client Information
Client Contact:
Kirk Iwamoto
Company:
City & County of Honolulu
Address:
830 South Beretania Street, Chemistry Lab
City:
Honolulu
State, Zip:
HI, 96843
Phone:
808-748-5840 (tel)
Email:
kiwamoto@hbwis.org
Project Name:
Site:

Company: City & County of Honolulu		PWSID:		Analysis Requested												Job #:									
Address: 630 South Beretania Street, Chemistry Lab				Due Date Requested:														380-239383							
City: Honolulu				TAT Requested (days): RUSH																					
State, Zip: HI, 96843				Compliance Project: A No																					
Phone: 808-748-5840 (tel)				PO #:																					
Email: kivamolo@hbsw.org				WO #:																					
Project Name:				Project #:																					
Site:				SSOW#:																					
Sample Identification				Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=sediment, O=other)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		537.1 DW, PREC - 537.1 Full List		533 - All Analytes		Total Number of Containers		Preservation Codes:		Special Instructions/Note:	
HALAWA SHAFT VIEWING POOL				29-Sep-2026		09:30		G		Water						3		3							
TB: HALAWA SHAFT VIEWING POOL				29-Sep-2026																					
FB: HALAWA SHAFT VIEWING POOL				29-Sep-2026		09:30				Water						1		1							

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological
Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months

Special Instructions/QC Requirements:

Emitted by: [Redacted] Date: 9/30/26 12:00
Received by: [Redacted] Date/Time: 10/1/26 1000
Company: HBWS
Relinquished by: [Redacted] Date/Time: [Redacted]
Company: [Redacted]

Custody Seal No.: [Redacted]
Custody Seals Intact: Yes No
Cooler Temperature(s) °C and Other Remarks: (634) 1.2 x 0.2 = 1.4 yd - frozen

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-239383-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 239383

List Number: 1

Creator: Abaya, Ashton

List Source: Eurofins Pomona

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