

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-225595-1

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



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Definitions/Glossary

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

Job ID: 380-225595-1
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: 380-225595-1

Job ID: 380-225595-1

Eurofins Pomona

Job Narrative 380-225595-1

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 7/16/2026 9:52 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C.

PFAS

PFAS 537.1: The field blank for FB: HALAWA SHAFT VIEWING POOL (380-225595-2) was accidentally lost during extraction and no more back up volume was available for re-extraction. Due to the native sample, HALAWA SHAFT VIEWING POOL (380-225595-1) containing PFAS hit. PFAS 537.1 was excluded due to no appropriate Field Blank available to confirm the PFAS detections in method 537.1. The sample is collected weekly thus follow up sample was collected on 07/21/26 under job # 380-226848-1. Analysis by EPA 537.1 is currently in progress. (XWB4)

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: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.0		2.0	ng/L	1		533	Total/NA

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-2

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: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-1

Date Collected: 07/14/26 09:30

Matrix: Water

Date Received: 07/16/26 09:52

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluorohexanesulfonic acid (PFHxS)	3.3		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluorooctanesulfonic acid (PFOS)	3.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C6 PFDA	96		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C5 PFHxA	89		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C4 PFHpA	98		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C8 PFOA	100		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C9 PFNA	106		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C7 PFUnA	104		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C2 PFDoA	106		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C4 PFBA	103		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C5 PFPeA	96		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C3 PFBS	108		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C3 PFHxS	107		50 - 200	07/19/26 16:33	07/20/26 11:17	1

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Client Sample Results

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-1

Date Collected: 07/14/26 09:30

Matrix: Water

Date Received: 07/16/26 09:52

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	114		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C2-4:2-FTS	105		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C2-6:2-FTS	97		50 - 200	07/19/26 16:33	07/20/26 11:17	1
13C2-8:2-FTS	93		50 - 200	07/19/26 16:33	07/20/26 11:17	1

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-2

Date Collected: 07/14/26 09:30

Matrix: Water

Date Received: 07/16/26 09:52

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		07/19/26 16:33	07/20/26 11:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/19/26 16:33	07/20/26 11:26	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	103		50 - 200			07/19/26 16:33	07/20/26 11:26	1
13C6 PFDA	104		50 - 200			07/19/26 16:33	07/20/26 11:26	1
13C5 PFHxA	105		50 - 200			07/19/26 16:33	07/20/26 11:26	1

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Client Sample Results

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-2

Date Collected: 07/14/26 09:30

Matrix: Water

Date Received: 07/16/26 09:52

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFHpA	108		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C8 PFOA	111		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C9 PFNA	117		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C7 PFUnA	109		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C2 PFDoA	110		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C4 PFBA	110		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C5 PFPeA	106		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C3 PFBS	105		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C3 PFHxS	109		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C8 PFOS	115		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C2-4:2-FTS	99		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C2-6:2-FTS	96		50 - 200	07/19/26 16:33	07/20/26 11:26	1
13C2-8:2-FTS	95		50 - 200	07/19/26 16:33	07/20/26 11:26	1

Action Limit Summary

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-1

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)	3.3		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-2

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

Surrogate Summary

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

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)
380-225531-B-1-A MS	Matrix Spike	109	114	115	115
380-225531-C-1-A MSD	Matrix Spike Duplicate	124	109	111	115
380-225595-1	HALAWA SHAFT VIEWING POOL	114	119	112	115
LCS 380-240720/23-A	Lab Control Sample	106	109	115	108
MBL 380-240720/21-A	Method Blank	109	117	122	116
MRL 380-240720/22-A	Lab Control Sample	117	116	124	117

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: 380-225595-1
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)
380-225168-B-1-A MS	Matrix Spike	110	103	104	110	111	117	112	108
380-225168-C-1-A MSD	Matrix Spike Duplicate	110	104	106	110	113	113	113	114
380-225595-1	HALAWA SHAFT VIEWING POOL	91	96	89	98	100	106	104	106
380-225595-2	FB: HALAWA SHAFT VIEWING POOL	103	104	105	108	111	117	109	110
LCS 380-240770/22-A	Lab Control Sample	111	104	106	110	113	114	115	112
MBL 380-240770/20-A	Method Blank	111	107	110	112	120	118	119	118
MRL 380-240770/21-A	Lab Control Sample	104	101	103	108	114	114	110	109

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-225168-B-1-A MS	Matrix Spike	111	105	102	109	113	88	88	89
380-225168-C-1-A MSD	Matrix Spike Duplicate	107	99	102	110	113	92	91	90
380-225595-1	HALAWA SHAFT VIEWING POOL	103	96	108	107	114	105	97	93
380-225595-2	FB: HALAWA SHAFT VIEWING POOL	110	106	105	109	115	99	96	95
LCS 380-240770/22-A	Lab Control Sample	110	106	104	113	112	86	87	87
MBL 380-240770/20-A	Method Blank	119	111	108	119	119	100	101	101
MRL 380-240770/21-A	Lab Control Sample	113	107	108	117	117	97	96	96

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: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-240770/20-A

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 240770

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.24		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		07/19/26 16:33	07/20/26 07:42	1
Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	111		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C6 PFDA	107		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C5 PFHxA	110		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C4 PFHpA	112		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C8 PFOA	120		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C9 PFNA	118		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C7 PFUnA	119		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C2 PFDoA	118		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C4 PFBA	119		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C5 PFPeA	111		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C3 PFBS	108		50 - 200			07/19/26 16:33	07/20/26 07:42	1
13C3 PFHxS	119		50 - 200			07/19/26 16:33	07/20/26 07:42	1

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QC Sample Results

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-240770/20-A

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 240770

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	119		50 - 200	07/19/26 16:33	07/20/26 07:42	1
13C2-4:2-FTS	100		50 - 200	07/19/26 16:33	07/20/26 07:42	1
13C2-6:2-FTS	101		50 - 200	07/19/26 16:33	07/20/26 07:42	1
13C2-8:2-FTS	101		50 - 200	07/19/26 16:33	07/20/26 07:42	1

Lab Sample ID: LCS 380-240770/22-A

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240770

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	118	105		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	118	108		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	118	109		ng/L		92	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	118	109		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	118	112		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	118	117		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	118	106		ng/L		90	70 - 130
Perfluoroheptanoic acid (PFHpA)	118	112		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	118	106		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	118	111		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	118	111		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	118	107		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	118	108		ng/L		91	70 - 130
Perfluoroundecanoic acid (PFUnA)	118	107		ng/L		91	70 - 130
Perfluorobutanoic acid (PFBA)	118	110		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	118	107		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	118	110		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	118	105		ng/L		89	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	118	105		ng/L		89	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	118	111		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	118	108		ng/L		92	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	118	111		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	118	110		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	118	105		ng/L		89	70 - 130

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QC Sample Results

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-240770/22-A

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240770

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	118	104		ng/L		88	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	111		50 - 200				
13C6 PFDA	104		50 - 200				
13C5 PFHxA	106		50 - 200				
13C4 PFHpA	110		50 - 200				
13C8 PFOA	113		50 - 200				
13C9 PFNA	114		50 - 200				
13C7 PFUnA	115		50 - 200				
13C2 PFDoA	112		50 - 200				
13C4 PFBA	110		50 - 200				
13C5 PFPeA	106		50 - 200				
13C3 PFBS	104		50 - 200				
13C3 PFHxS	113		50 - 200				
13C8 PFOS	112		50 - 200				
13C2-4:2-FTS	86		50 - 200				
13C2-6:2-FTS	87		50 - 200				
13C2-8:2-FTS	87		50 - 200				

Lab Sample ID: MRL 380-240770/21-A

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240770

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	1.80	J	ng/L		91	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	1.97	1.77	J	ng/L		90	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	1.95	J	ng/L		99	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	1.78	J	ng/L		91	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	1.96	J	ng/L		100	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	2.07	J	ng/L		105	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	1.84	J	ng/L		94	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	1.94	J	ng/L		98	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	1.86	J	ng/L		94	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	2.04	J	ng/L		104	50 - 150
Perfluorononanoic acid (PFNA)	1.97	1.84	J	ng/L		93	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	1.91	J	ng/L		97	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	1.81	J	ng/L		92	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	1.91	J	ng/L		97	50 - 150
Perfluorobutanoic acid (PFBA)	1.97	2.11	J	ng/L		107	50 - 150

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QC Sample Results

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-240770/21-A

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240770

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	1.80	J	ng/L		91	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	2.00	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.13	J	ng/L		108	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	1.98	J	ng/L		101	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.97	1.95	J	ng/L		99	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	1.72	J	ng/L		87	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	1.79	J	ng/L		91	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	1.92	J	ng/L		98	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	1.91	J	ng/L		97	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	1.74	J	ng/L		89	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	104		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	108		50 - 200
13C8 PFOA	114		50 - 200
13C9 PFNA	114		50 - 200
13C7 PFUnA	110		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	113		50 - 200
13C5 PFPeA	107		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	117		50 - 200
13C8 PFOS	117		50 - 200
13C2-4:2-FTS	97		50 - 200
13C2-6:2-FTS	96		50 - 200
13C2-8:2-FTS	96		50 - 200

Lab Sample ID: 380-225168-B-1-A MS

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 240770

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		59.2	50.3		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.2	53.2		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	55.6		ng/L		94	70 - 130

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QC Sample Results

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-225168-B-1-A MS

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 240770

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		59.2	52.5		ng/L		89	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	58.7		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		59.2	60.2		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	55.1		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		59.2	54.3		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	55.0		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	57.9		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		59.2	55.2		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.2	53.5		ng/L		90	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		59.2	53.6		ng/L		91	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	54.7		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		59.2	57.7		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	52.0		ng/L		88	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	57.4		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	54.1		ng/L		92	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		59.2	57.2		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		59.2	56.3		ng/L		95	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	54.3		ng/L		92	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.2	53.2		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	54.7		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	52.8		ng/L		89	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	51.3		ng/L		87	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	110		50 - 200
13C6 PFDA	103		50 - 200
13C5 PFHxA	104		50 - 200
13C4 PFHpA	110		50 - 200
13C8 PFOA	111		50 - 200
13C9 PFNA	117		50 - 200
13C7 PFUnA	112		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	111		50 - 200
13C5 PFPeA	105		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	113		50 - 200

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QC Sample Results

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-225168-B-1-A MS

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 240770

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	88		50 - 200
13C2-6:2-FTS	88		50 - 200
13C2-8:2-FTS	89		50 - 200

Lab Sample ID: 380-225168-C-1-A MSD

Matrix: Water

Analysis Batch: 240902

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 240770

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		59.3	52.2		ng/L		88	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		59.3	54.3		ng/L		92	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.3	60.3		ng/L		102	70 - 130	8	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		59.3	53.7		ng/L		91	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.3	58.6		ng/L		99	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		59.3	61.8		ng/L		104	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		59.3	54.1		ng/L		91	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		59.3	57.8		ng/L		98	70 - 130	6	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.3	57.8		ng/L		97	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	<2.0		59.3	57.7		ng/L		97	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		59.3	57.1		ng/L		96	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.3	54.2		ng/L		91	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		59.3	54.6		ng/L		92	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		59.3	56.9		ng/L		96	70 - 130	4	30
Perfluorobutanoic acid (PFBA)	<2.0		59.3	58.5		ng/L		99	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.3	54.7		ng/L		92	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.3	56.0		ng/L		95	70 - 130	2	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.3	56.5		ng/L		95	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.3	58.2		ng/L		98	70 - 130	2	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		59.3	59.2		ng/L		100	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.3	57.1		ng/L		96	70 - 130	5	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.3	55.1		ng/L		93	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	<2.0		59.3	59.1		ng/L		100	70 - 130	8	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.3	55.0		ng/L		93	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.3	52.7		ng/L		89	70 - 130	3	30

Eurofins Pomona

QC Sample Results

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Isotope Dilution	MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	110		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	106		50 - 200
13C4 PFHpA	110		50 - 200
13C8 PFOA	113		50 - 200
13C9 PFNA	113		50 - 200
13C7 PFUnA	113		50 - 200
13C2 PFDoA	114		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	99		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	110		50 - 200
13C8 PFOS	113		50 - 200
13C2-4:2-FTS	92		50 - 200
13C2-6:2-FTS	91		50 - 200
13C2-8:2-FTS	90		50 - 200

QC Association Summary

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 240770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-225595-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-225595-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-240770/20-A	Method Blank	Total/NA	Water	533	
LCS 380-240770/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-240770/21-A	Lab Control Sample	Total/NA	Water	533	
380-225168-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-225168-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 240902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-225595-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	240770
380-225595-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	240770
MBL 380-240770/20-A	Method Blank	Total/NA	Water	533	240770
LCS 380-240770/22-A	Lab Control Sample	Total/NA	Water	533	240770
MRL 380-240770/21-A	Lab Control Sample	Total/NA	Water	533	240770
380-225168-B-1-A MS	Matrix Spike	Total/NA	Water	533	240770
380-225168-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	240770

Lab Chronicle

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-1

Date Collected: 07/14/26 09:30

Matrix: Water

Date Received: 07/16/26 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			240770	N8NE	EA POM	07/19/26 16:33
Total/NA	Analysis	533		1	240902	SZ9R	EA POM	07/20/26 11:17

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-225595-2

Date Collected: 07/14/26 09:30

Matrix: Water

Date Received: 07/16/26 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			240770	N8NE	EA POM	07/19/26 16:33
Total/NA	Analysis	533		1	240902	SZ9R	EA POM	07/20/26 11:26

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: 380-225595-1
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	01-31-26 *

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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

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

Job ID: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated 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: 380-225595-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-225595-1	HALAWA SHAFT VIEWING POOL	Water	07/14/26 09:30	07/16/26 09:52	Hawaii
380-225595-2	FB: HALAWA SHAFT VIEWING POOL	Water	07/14/26 09:30	07/16/26 09:52	Hawaii

Chain of Custody Record



Environment Testing
America

Client Information		Sampler: Lopez, Maria		Lab PM		Carrier Tracking No(s)		COC No:	
Client Contact: Kirk Iwamoto		Phone: +1 808 748 5840		E-Mail: Maria.Lopez@eurofins.com		State of Origin:		Page: Page 1 of 1	
Company: City & County of Honolulu		PWSID:		Analysis Requested		Job #:		Preservation Codes	
Address: 630 South Beretania Street; Chemistry Lab		Due Date Requested		TAT Requested (days)		RUSH		A HCL B NaOH C Zn Acetate D Nitric Acid E NaHSO4 F MeOH G Amchlor H Ascorbic Acid I Ice J DI Water K EDTA L EDA Other	
City: Honolulu		Compliance Project: Δ No		PO #:		C20525101 exp 05312023		M Hexane N None O AsNaO2 P - Na2O4S Q - Na2SO3 R Na2SO4 S H2SO4 T TSP Dodecylhydrate U - Acetone V - MCAA W pH 4-5 Y - Trizma Z other (specify) NH4 Acetate	
Phone: 808-748-5840 (tel)		WO #:		Project #:		3800111			
Email: kiwamoto@hbws.org		SSOW#:		Project Name:		RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill			
Site:		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastefell, AT=issue, A=air)	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastefell, AT=issue, A=air)	
HALAWA SHAFT VIEWING POOL		14-Jul-2026		9:30		G		Water	
FB HALAWA SHAFT VIEWING POOL		14-Jul-2026		9:30		G		Water	
Possible Hazard Identification		Empty Kit Relinquished by:		Date		Time		Special Instructions/Note:	
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		Relinquished by:		Date		Time		Total Number of containers	
Deliverable Requested I, II, III IV Other (specify)		Relinquished by:		Date		Time		533 All Analytes	
Empty Kit Relinquished by:		Relinquished by:		Date		Time		537 1 LW, PREC 537 1 Full List	
Relinquished by:		Relinquished by:		Date		Time		Perform MS/MSD (Yes or No)	
Relinquished by:		Relinquished by:		Date		Time		Field Filtered Sample (Yes or No)	
Relinquished by:		Relinquished by:		Date		Time		533 All Analytes	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No		Date		Time		380-225595 COC	
Method of Shipment:		Received by:		Date/Time		Company		Special Instructions/Note:	
8748 4326 9289		Yudi #1676		4:52		Company		Total Number of containers	
640/2.6 = 26		Received by:		Date/Time		Company		Special Instructions/Note:	
Cooler Temperature(s) °C and Other Remarks:		Received by:		Date/Time		Company		Total Number of containers	
640/2.6 = 26		Received by:		Date/Time		Company		Special Instructions/Note:	

Ver: 01/16/2017 7/29/2026

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-225595-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 225595

List Number: 1

Creator: Del Rosario, Michael

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").	N/A	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	