

ANALYTICAL REPORT

PREPARED FOR

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Generated 8/14/2026 11:23:58 AM

JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-229432-1

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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: 380-229432-1
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: 380-229432-1

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Job Narrative 380-229432-1

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

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

Receipt

The samples were received on 8/6/2026 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0°C and 5.2°C.

PFAS

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

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Detection Summary

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-1

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)	3.1		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)	3.6		2.0	ng/L	1		EPA 537.1 V2	Total/NA

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-2

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: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-1

Date Collected: 08/04/26 09:30

Matrix: Water

Date Received: 08/06/26 09:30

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		08/10/26 16:45	08/11/26 14:14	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluorohexanesulfonic acid (PFHxS)	3.3		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluorooctanesulfonic acid (PFOS)	3.1		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/10/26 16:45	08/11/26 14:14	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	90		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C6 PFDA	94		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C5 PFHxA	99		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C4 PFHpA	99		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C8 PFOA	104		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C9 PFNA	104		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C7 PFUnA	104		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C2 PFDoA	103		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C4 PFBA	109		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C5 PFPeA	106		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C3 PFBS	108		50 - 200			08/10/26 16:45	08/11/26 14:14	1
13C3 PFHxS	108		50 - 200			08/10/26 16:45	08/11/26 14:14	1

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Client Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-1

Date Collected: 08/04/26 09:30

Matrix: Water

Date Received: 08/06/26 09:30

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	112		50 - 200	08/10/26 16:45	08/11/26 14:14	1
13C2-4:2-FTS	125		50 - 200	08/10/26 16:45	08/11/26 14:14	1
13C2-6:2-FTS	105		50 - 200	08/10/26 16:45	08/11/26 14:14	1
13C2-8:2-FTS	90		50 - 200	08/10/26 16:45	08/11/26 14:14	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		08/08/26 09:19	08/10/26 21:12	1
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/08/26 09:19	08/10/26 21:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	101		70 - 130			08/08/26 09:19	08/10/26 21:12	1
13C2 PFHxA	101		70 - 130			08/08/26 09:19	08/10/26 21:12	1
13C2 PFDA	103		70 - 130			08/08/26 09:19	08/10/26 21:12	1
13C3-GenX	103		70 - 130			08/08/26 09:19	08/10/26 21:12	1

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-2

Date Collected: 08/04/26 09:30

Matrix: Water

Date Received: 08/06/26 09:30

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1

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Client Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-2

Date Collected: 08/04/26 09:30

Matrix: Water

Date Received: 08/06/26 09:30

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/09/26 16:40	08/10/26 16:07	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C6 PFDA	85		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C5 PFHxA	93		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C4 PFHpA	94		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C8 PFOA	91		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C9 PFNA	91		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C7 PFUnA	92		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C2 PFDoA	96		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C4 PFBA	99		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C5 PFPeA	100		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C3 PFBS	127		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C3 PFHxS	127		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C8 PFOS	122		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C2-4:2-FTS	117		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C2-6:2-FTS	108		50 - 200			08/09/26 16:40	08/10/26 16:07	1
13C2-8:2-FTS	99		50 - 200			08/09/26 16:40	08/10/26 16:07	1

Eurofins Pomona

Client Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-2

Date Collected: 08/04/26 09:30

Matrix: Water

Date Received: 08/06/26 09:30

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		08/11/26 11:30	08/12/26 13:14	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/11/26 11:30	08/12/26 13:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	88		70 - 130			08/11/26 11:30	08/12/26 13:14	1
13C2 PFHxA	91		70 - 130			08/11/26 11:30	08/12/26 13:14	1
13C2 PFDA	92		70 - 130			08/11/26 11:30	08/12/26 13:14	1
13C3-GenX	86		70 - 130			08/11/26 11:30	08/12/26 13:14	1

Action Limit Summary

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.3		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.1		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)	3.6		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: 380-229432-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	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: 380-229432-1
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)
380-229139-B-1-A MS	Matrix Spike	98	102	100	97
380-229139-C-1-A MSD	Matrix Spike Duplicate	97	105	101	97
380-229432-1	HALAWA SHAFT VIEWING POOL	101	101	103	103
380-229432-2	FB HALAWA SHAFT VIEWING POOL	88	91	92	86
380-229920-B-1-A MS	Matrix Spike	98	97	100	91
380-229920-C-1-A MSD	Matrix Spike Duplicate	99	95	100	91
LCS 380-245239/23-A	Lab Control Sample	98	102	98	102
LCS 380-245671/17-A	Lab Control Sample	87	89	97	88
MBL 380-245239/21-A	Method Blank	91	99	97	91
MBL 380-245671/15-A	Method Blank	93	93	96	88
MRL 380-245239/22-A	Lab Control Sample	104	110	107	100
MRL 380-245671/16-A	Lab Control Sample	90	94	97	85
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: 380-229432-1
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)
380-229075-B-1-A MS	Matrix Spike	114	104	112	119	117	113	112	109
380-229075-C-1-A MSD	Matrix Spike Duplicate	112	104	111	112	115	110	109	104
380-229432-1	HALAWA SHAFT VIEWING POOL	90	94	99	99	104	104	104	103
380-229432-2	FB HALAWA SHAFT VIEWING POOL	85	85	93	94	91	91	92	96
380-229601-B-1-A MS	Matrix Spike	116	101	107	109	104	109	111	113
380-229601-B-1-B MSD	Matrix Spike Duplicate	115	100	115	110	111	113	114	113
LCS 380-245294/22-A	Lab Control Sample	91	87	93	88	92	93	98	97
LCS 380-245550/22-A	Lab Control Sample	101	97	102	100	104	106	106	108
MBL 380-245294/20-A	Method Blank	83	92	91	95	97	97	100	99
MBL 380-245550/20-A	Method Blank	93	95	101	94	102	104	105	105
MRL 380-245294/21-A	Lab Control Sample	70	77	74	81	84	81	83	88
MRL 380-245550/21-A	Lab Control Sample	95	97	101	106	106	108	104	106

		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)
380-229075-B-1-A MS	Matrix Spike	112	119	115	118	117	117	108	104
380-229075-C-1-A MSD	Matrix Spike Duplicate	112	116	112	113	116	110	106	102
380-229432-1	HALAWA SHAFT VIEWING POOL	109	106	108	108	112	125	105	90
380-229432-2	FB HALAWA SHAFT VIEWING POOL	99	100	127	127	122	117	108	99
380-229601-B-1-A MS	Matrix Spike	112	108	109	109	111	97	104	86
380-229601-B-1-B MSD	Matrix Spike Duplicate	108	109	114	108	114	105	106	85
LCS 380-245294/22-A	Lab Control Sample	95	95	111	116	118	107	106	105
LCS 380-245550/22-A	Lab Control Sample	105	103	105	105	110	96	95	87
MBL 380-245294/20-A	Method Blank	92	92	111	122	122	128	127	116
MBL 380-245550/20-A	Method Blank	106	105	103	108	114	105	101	86
MRL 380-245294/21-A	Lab Control Sample	83	84	104	104	107	105	110	100
MRL 380-245550/21-A	Lab Control Sample	104	106	107	113	114	110	105	91

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: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-245294/20-A
Matrix: Water
Analysis Batch: 245467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245294

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		08/09/26 16:40	08/10/26 12:20	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.99		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.24		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		08/09/26 16:40	08/10/26 12:20	1
Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	83		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C6 PFDA	92		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C5 PFHxA	91		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C4 PFHpA	95		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C8 PFOA	97		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C9 PFNA	97		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C7 PFUnA	100		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C2 PFDoA	99		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C4 PFBA	92		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C5 PFPeA	92		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C3 PFBS	111		50 - 200			08/09/26 16:40	08/10/26 12:20	1
13C3 PFHxS	122		50 - 200			08/09/26 16:40	08/10/26 12:20	1

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-245294/20-A

Matrix: Water

Analysis Batch: 245467

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245294

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	122		50 - 200	08/09/26 16:40	08/10/26 12:20	1
13C2-4:2-FTS	128		50 - 200	08/09/26 16:40	08/10/26 12:20	1
13C2-6:2-FTS	127		50 - 200	08/09/26 16:40	08/10/26 12:20	1
13C2-8:2-FTS	116		50 - 200	08/09/26 16:40	08/10/26 12:20	1

Lab Sample ID: LCS 380-245294/22-A

Matrix: Water

Analysis Batch: 245467

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245294

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	118	99.4		ng/L		84	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	118	98.9		ng/L		84	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	118	106		ng/L		90	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	118	108		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	118	113		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	118	114		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	118	110		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	118	108		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	118	107		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	118	108		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	118	111		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	118	103		ng/L		87	70 - 130
Perfluorooctanoic acid (PFOA)	118	109		ng/L		93	70 - 130
Perfluoroundecanoic acid (PFUnA)	118	104		ng/L		88	70 - 130
Perfluorobutanoic acid (PFBA)	118	105		ng/L		89	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	118	113		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	118	115		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	118	111		ng/L		94	70 - 130
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	118	108		ng/L		91	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	118	118		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	118	111		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	118	105		ng/L		89	70 - 130
Perfluoropentanoic acid (PFPeA)	118	111		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	118	107		ng/L		91	70 - 130

Eurofins Pomona

QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-245294/22-A

Matrix: Water

Analysis Batch: 245467

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245294

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	118	108		ng/L		92	70 - 130
	LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	91		50 - 200				
13C6 PFDA	87		50 - 200				
13C5 PFHxA	93		50 - 200				
13C4 PFHpA	88		50 - 200				
13C8 PFOA	92		50 - 200				
13C9 PFNA	93		50 - 200				
13C7 PFUnA	98		50 - 200				
13C2 PFDoA	97		50 - 200				
13C4 PFBA	95		50 - 200				
13C5 PFPeA	95		50 - 200				
13C3 PFBS	111		50 - 200				
13C3 PFHxS	116		50 - 200				
13C8 PFOS	118		50 - 200				
13C2-4:2-FTS	107		50 - 200				
13C2-6:2-FTS	106		50 - 200				
13C2-8:2-FTS	105		50 - 200				

Lab Sample ID: MRL 380-245294/21-A

Matrix: Water

Analysis Batch: 245467

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245294

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	1.83	J	ng/L		93	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.97	1.90	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	1.85	J	ng/L		94	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	1.81	J	ng/L		92	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	1.91	J	ng/L		97	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	2.16	J	ng/L		110	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	1.99	J	ng/L		101	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	1.93	J	ng/L		98	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	1.86	J	ng/L		95	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	2.08	J	ng/L		106	50 - 150
Perfluorononanoic acid (PFNA)	1.97	1.99	J	ng/L		101	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	1.93	J	ng/L		98	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	2.05	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	2.09	J	ng/L		106	50 - 150
Perfluorobutanoic acid (PFBA)	1.97	2.06	J	ng/L		105	50 - 150

Eurofins Pomona

QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-245294/21-A

Matrix: Water

Analysis Batch: 245467

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245294

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	2.09	J	ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	2.03	J	ng/L		103	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.05	J	ng/L		104	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	2.12	J	ng/L		108	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	1.97	1.94	J	ng/L		99	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	1.90	J	ng/L		97	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	1.97	J	ng/L		100	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	1.85	J	ng/L		94	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	2.00	J	ng/L		102	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	1.87	J	ng/L		95	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	70		50 - 200
13C6 PFDA	77		50 - 200
13C5 PFHxA	74		50 - 200
13C4 PFHpA	81		50 - 200
13C8 PFOA	84		50 - 200
13C9 PFNA	81		50 - 200
13C7 PFUnA	83		50 - 200
13C2 PFDoA	88		50 - 200
13C4 PFBA	83		50 - 200
13C5 PFPeA	84		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	105		50 - 200
13C2-6:2-FTS	110		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: 380-229075-B-1-A MS

Matrix: Water

Analysis Batch: 245467

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245294

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	53.3		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.2	53.9		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	53.1		ng/L		90	70 - 130

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-229075-B-1-A MS

Matrix: Water

Analysis Batch: 245467

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245294

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		59.2	58.4		ng/L		99	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	56.7		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		59.2	59.4		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	56.4		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		59.2	53.8		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	54.6		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	60.4		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		59.2	56.9		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.2	55.3		ng/L		93	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		59.2	57.5		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	55.0		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		59.2	57.2		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	59.5		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	55.2		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	56.7		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.2	57.3		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		59.2	56.8		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	57.4		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.2	56.3		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	57.0		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	56.6		ng/L		96	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	56.0		ng/L		95	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	114		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	112		50 - 200
13C4 PFHpA	119		50 - 200
13C8 PFOA	117		50 - 200
13C9 PFNA	113		50 - 200
13C7 PFUnA	112		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	112		50 - 200
13C5 PFPeA	119		50 - 200
13C3 PFBS	115		50 - 200
13C3 PFHxS	118		50 - 200
13C8 PFOS	117		50 - 200

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-229075-B-1-A MS

Matrix: Water

Analysis Batch: 245467

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245294

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	117		50 - 200
13C2-6:2-FTS	108		50 - 200
13C2-8:2-FTS	104		50 - 200

Lab Sample ID: 380-229075-C-1-A MSD

Matrix: Water

Analysis Batch: 245467

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 245294

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		59.2	51.1		ng/L		86	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		59.2	51.9		ng/L		88	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	55.5		ng/L		94	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		59.2	56.1		ng/L		95	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	57.2		ng/L		97	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		59.2	57.3		ng/L		97	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	57.8		ng/L		98	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		59.2	58.2		ng/L		98	70 - 130	8	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	56.5		ng/L		95	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	57.4		ng/L		95	70 - 130	5	30
Perfluorononanoic acid (PFNA)	<2.0		59.2	56.7		ng/L		96	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.2	53.6		ng/L		90	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		59.2	56.9		ng/L		95	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	55.5		ng/L		94	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		59.2	58.1		ng/L		98	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	58.3		ng/L		99	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	57.6		ng/L		97	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	56.8		ng/L		96	70 - 130	0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.2	57.4		ng/L		97	70 - 130	0	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		59.2	58.6		ng/L		99	70 - 130	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	54.7		ng/L		92	70 - 130	5	30
Perfluoro-4-methoxybutanoic acid (PFMPA)	<2.0		59.2	58.8		ng/L		99	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	57.8		ng/L		96	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	57.0		ng/L		96	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	57.7		ng/L		98	70 - 130	3	30

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QC Sample Results

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

Job ID: 380-229432-1
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	112		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	111		50 - 200
13C4 PFHpA	112		50 - 200
13C8 PFOA	115		50 - 200
13C9 PFNA	110		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	112		50 - 200
13C5 PFPeA	116		50 - 200
13C3 PFBS	112		50 - 200
13C3 PFHxS	113		50 - 200
13C8 PFOS	116		50 - 200
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	102		50 - 200

Lab Sample ID: MBL 380-245550/20-A

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245550

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosafluoro-3-oxaundecan	<0.29		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
e-1-sulfonic acid (11CI-PF3OUdS)								
9-Chlorohexadecafluoro-3-oxanonan	<0.30		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
e-1-sulfonic acid(9CI-PF3ONS)								
4,8-Dioxa-3H-perfluorononanoic acid	<0.59		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
(ADONA)								
Hexafluoropropylene Oxide Dimer	<0.98		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Acid (HFPO-DA/GenX)								
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
1H,1H,2H,2H-Perfluorodecane	<0.38		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
sulfonic acid (8:2 FTS)								
1H,1H,2H,2H-Perfluorohexane	<0.36		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
sulfonic acid (4:2 FTS)								
1H,1H,2H,2H-Perfluorooctane sulfonic	<0.47		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
acid (6:2 FTS)								
Nonafluoro-3,6-dioxaheptanoic acid	<0.46		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
(NFDHA)								
Perfluoro (2-ethoxyethane) sulfonic	<0.24		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
acid (PFEESA)								
Perfluoro-3-methoxypropanoic acid	<0.45		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
(PFMPA)								
Perfluoro-4-methoxybutanoic acid	<0.15		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
(PFMBA)								

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-245550/20-A

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245550

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		08/10/26 16:45	08/11/26 11:12	1
Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C6 PFDA	95		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C5 PFHxA	101		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C4 PFHpA	94		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C8 PFOA	102		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C9 PFNA	104		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C7 PFUnA	105		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C2 PFDoA	105		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C4 PFBA	106		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C5 PFPeA	105		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C3 PFBS	103		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C3 PFHxS	108		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C8 PFOS	114		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C2-4:2-FTS	105		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C2-6:2-FTS	101		50 - 200			08/10/26 16:45	08/11/26 11:12	1
13C2-8:2-FTS	86		50 - 200			08/10/26 16:45	08/11/26 11:12	1

Lab Sample ID: LCS 380-245550/22-A

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	118	99.1		ng/L		84	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	118	101		ng/L		85	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	118	113		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	118	107		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	118	116		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	118	117		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	118	110		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	118	112		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	118	112		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	118	110		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	118	111		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	118	108		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	118	110		ng/L		93	70 - 130

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-245550/22-A

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	118	108		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	118	110		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	118	112		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	118	112		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	118	113		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	118	103		ng/L		88	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	118	128		ng/L		108	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	118	110		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	118	108		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	118	109		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	118	108		ng/L		92	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	118	111		ng/L		94	70 - 130

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	101		50 - 200
13C6 PFDA	97		50 - 200
13C5 PFHxA	102		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	104		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	106		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	103		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	105		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	96		50 - 200
13C2-6:2-FTS	95		50 - 200
13C2-8:2-FTS	87		50 - 200

Lab Sample ID: MRL 380-245550/21-A

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245550

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	1.77	J	ng/L		90	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.97	1.76	J	ng/L		89	50 - 150

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-245550/21-A

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245550

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	1.90	J	ng/L		96	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	1.94	J	ng/L		98	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	1.90	J	ng/L		97	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	2.19	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	2.18	J	ng/L		111	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	2.14	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	1.98	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	1.93	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	1.97	2.04	J	ng/L		104	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	2.01	J	ng/L		102	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	1.99	J	ng/L		101	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	2.09	J	ng/L		106	50 - 150
Perfluorobutanoic acid (PFBA)	1.97	2.14	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	2.03	J	ng/L		103	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	2.17	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.17	J	ng/L		110	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	2.05	J	ng/L		104	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	1.97	1.88	J	ng/L		95	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	1.99	J	ng/L		101	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	1.88	J	ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	1.86	J	ng/L		94	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	1.99	J	ng/L		101	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	1.94	J	ng/L		99	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	97		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	106		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	104		50 - 200
13C2 PFDoA	106		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	106		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	113		50 - 200

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-245550/21-A

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245550

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C8 PFOS	114		50 - 200
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	91		50 - 200

Lab Sample ID: 380-229601-B-1-A MS

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245550

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	102		ng/L		87	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		118	104		ng/L		88	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	110		ng/L		93	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		118	110		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	109		ng/L		92	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		118	112		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		118	109		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		118	107		ng/L		90	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	107		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		118	112		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		118	107		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	106		ng/L		89	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		118	114		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		118	111		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		118	108		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	110		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	116		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	109		ng/L		92	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		118	122		ng/L		103	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		118	127		ng/L		107	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	114		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	108		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		118	108		ng/L		90	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	107		ng/L		91	70 - 130

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-229601-B-1-A MS

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245550

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	109		ng/L		92	70 - 130
Isotope Dilution									
	%Recovery	MS Qualifier	Limits						
13C3 HFPO-DA	116		50 - 200						
13C6 PFDA	101		50 - 200						
13C5 PFHxA	107		50 - 200						
13C4 PFHpA	109		50 - 200						
13C8 PFOA	104		50 - 200						
13C9 PFNA	109		50 - 200						
13C7 PFUnA	111		50 - 200						
13C2 PFDoA	113		50 - 200						
13C4 PFBA	112		50 - 200						
13C5 PFPeA	108		50 - 200						
13C3 PFBS	109		50 - 200						
13C3 PFHxS	109		50 - 200						
13C8 PFOS	111		50 - 200						
13C2-4:2-FTS	97		50 - 200						
13C2-6:2-FTS	104		50 - 200						
13C2-8:2-FTS	86		50 - 200						

Lab Sample ID: 380-229601-B-1-B MSD

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 245550

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	101		ng/L		85	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		118	98.2		ng/L		83	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	112		ng/L		95	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		118	108		ng/L		92	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	107		ng/L		90	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		118	118		ng/L		100	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		118	111		ng/L		94	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		118	112		ng/L		94	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	113		ng/L		95	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	<2.0		118	99.1		ng/L		83	70 - 130	12	30
Perfluorononanoic acid (PFNA)	<2.0		118	111		ng/L		94	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	108		ng/L		91	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		118	108		ng/L		91	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)	<2.0		118	108		ng/L		91	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		118	112		ng/L		95	70 - 130	4	30

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-229601-B-1-B MSD

Matrix: Water

Analysis Batch: 245655

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 245550

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	114		ng/L		97	70 - 130	4	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	113		ng/L		96	70 - 130	2	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	105		ng/L		89	70 - 130	4	30
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		118	95.4		ng/L		81	70 - 130	25	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		118	124		ng/L		105	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	112		ng/L		95	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	109		ng/L		93	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		118	114		ng/L		95	70 - 130	5	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	108		ng/L		91	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	112		ng/L		95	70 - 130	2	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	115		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	115		50 - 200
13C4 PFHpA	110		50 - 200
13C8 PFOA	111		50 - 200
13C9 PFNA	113		50 - 200
13C7 PFUnA	114		50 - 200
13C2 PFDoA	113		50 - 200
13C4 PFBA	108		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	114		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	114		50 - 200
13C2-4:2-FTS	105		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	85		50 - 200

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

Lab Sample ID: MBL 380-245239/21-A

Matrix: Water

Analysis Batch: 245492

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245239

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-245239/21-A

Matrix: Water

Analysis Batch: 245492

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245239

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
Perfluorotridecanoic acid (PFTDA)	<0.35		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		08/08/26 09:19	08/10/26 17:41	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	91		70 - 130	08/08/26 09:19	08/10/26 17:41	1
13C2 PFHxA	99		70 - 130	08/08/26 09:19	08/10/26 17:41	1
13C2 PFDA	97		70 - 130	08/08/26 09:19	08/10/26 17:41	1
13C3-GenX	91		70 - 130	08/08/26 09:19	08/10/26 17:41	1

Lab Sample ID: LCS 380-245239/23-A

Matrix: Water

Analysis Batch: 245492

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	49.2	47.8		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	49.2	50.4		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.2	47.5		ng/L		97	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.2	50.8		ng/L		103	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.2	48.1		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	49.2	48.7		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	49.2	49.3		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	49.2	48.4		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	49.2	48.4		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.2	53.7		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.2	52.6		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.2	48.2		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	49.2	52.1		ng/L		106	70 - 130

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-245239/23-A

Matrix: Water

Analysis Batch: 245492

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	49.2	46.9		ng/L		95	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	49.2	46.9		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	49.2	50.9		ng/L		103	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.2	49.8		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.2	47.9		ng/L		97	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	98		70 - 130
13C3-GenX	102		70 - 130

Lab Sample ID: MRL 380-245239/22-A

Matrix: Water

Analysis Batch: 245492

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245239

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	1.81	J	ng/L		92	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	2.04	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	2.28	J	ng/L		116	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.97	2.07	J	ng/L		105	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.97	2.11	J	ng/L		107	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	2.01	J	ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	2.26	J	ng/L		115	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	2.13	J	ng/L		108	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	2.09	J	ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	2.09	J	ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	2.00	J	ng/L		102	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	2.10	J	ng/L		107	50 - 150
Perfluorononanoic acid (PFNA)	1.97	2.30	J	ng/L		117	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.97	2.09	J	ng/L		106	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	1.97	2.12	J	ng/L		108	50 - 150
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	1.97	2.18	J	ng/L		110	50 - 150

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-245239/22-A

Matrix: Water

Analysis Batch: 245492

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245239

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	2.06	J	ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	2.00	J	ng/L		102	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	104		70 - 130
13C2 PFHxA	110		70 - 130
13C2 PFDA	107		70 - 130
13C3-GenX	100		70 - 130

Lab Sample ID: 380-229139-B-1-A MS

Matrix: Water

Analysis Batch: 245492

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245239

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		24.7	23.9		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.7	25.4		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		24.7	25.2		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.7	24.9		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.7	24.8		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		24.7	24.7		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		24.7	26.4		ng/L		107	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		24.7	24.8		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		24.7	25.8		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.7	27.5		ng/L		111	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.7	26.3		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		24.7	24.2		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		24.7	27.9		ng/L		113	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		24.7	26.2		ng/L		106	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		24.7	25.4		ng/L		103	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.7	26.3		ng/L		106	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.7	25.0		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.7	25.0		ng/L		101	70 - 130

QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-229139-B-1-A MS

Matrix: Water

Analysis Batch: 245492

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245239

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	100		70 - 130
13C3-GenX	97		70 - 130

Lab Sample ID: 380-229139-C-1-A MSD

Matrix: Water

Analysis Batch: 245492

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 245239

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide	<2.0		24.6	23.3		ng/L		95	70 - 130	3	30
Dimer Acid (HFPO-DA/GenX)											
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.6	26.1		ng/L		106	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		24.6	24.3		ng/L		99	70 - 130	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.6	23.3		ng/L		95	70 - 130	7	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.6	24.5		ng/L		100	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		24.6	25.8		ng/L		105	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		24.6	24.7		ng/L		101	70 - 130	7	30
Perfluorooctanoic acid (PFOA)	<2.0		24.6	24.9		ng/L		101	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		24.6	25.0		ng/L		101	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.6	27.4		ng/L		111	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.6	26.4		ng/L		107	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		24.6	23.8		ng/L		97	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		24.6	27.7		ng/L		113	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		24.6	25.9		ng/L		105	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.6	24.7		ng/L		100	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.6	26.4		ng/L		107	70 - 130	0	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.6	25.1		ng/L		102	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.6	25.1		ng/L		102	70 - 130	0	30

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
d5-NEtFOSAA	97		70 - 130
13C2 PFHxA	105		70 - 130
13C2 PFDA	101		70 - 130
13C3-GenX	97		70 - 130

QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-245671/15-A

Matrix: Water

Analysis Batch: 245945

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245671

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
Perfluorotridecanoic acid (PFTrDA)	<0.35		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	<0.30		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<0.29		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		08/11/26 11:30	08/12/26 12:16	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	93		70 - 130	08/11/26 11:30	08/12/26 12:16	1
13C2 PFHxA	93		70 - 130	08/11/26 11:30	08/12/26 12:16	1
13C2 PFDA	96		70 - 130	08/11/26 11:30	08/12/26 12:16	1
13C3-GenX	88		70 - 130	08/11/26 11:30	08/12/26 12:16	1

Lab Sample ID: LCS 380-245671/17-A

Matrix: Water

Analysis Batch: 245945

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	49.2	40.6		ng/L		82	70 - 130
Perfluorooctanesulfonic acid (PFOS)	49.2	49.7		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.2	45.3		ng/L		92	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.2	46.0		ng/L		93	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.2	43.5		ng/L		88	70 - 130
Perfluorohexanoic acid (PFHxA)	49.2	44.0		ng/L		89	70 - 130
Perfluorododecanoic acid (PFDoA)	49.2	46.4		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	49.2	45.6		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	49.2	45.3		ng/L		92	70 - 130

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-245671/17-A

Matrix: Water

Analysis Batch: 245945

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	49.2	51.7		ng/L		105	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.2	49.8		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.2	46.3		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	49.2	45.7		ng/L		93	70 - 130
Perfluorotetradecanoic acid (PFTA)	49.2	41.1		ng/L		84	70 - 130
Perfluorotridecanoic acid (PFTDA)	49.2	48.0		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	49.2	49.0		ng/L		100	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.2	49.2		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.2	43.1		ng/L		88	70 - 130

Surrogate	LCS		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	87		70 - 130
13C2 PFHxA	89		70 - 130
13C2 PFDA	97		70 - 130
13C3-GenX	88		70 - 130

Lab Sample ID: MRL 380-245671/16-A

Matrix: Water

Analysis Batch: 245945

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245671

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	1.61	J	ng/L		82	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	1.88	J	ng/L		96	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	1.81	J	ng/L		92	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.97	1.86	J	ng/L		94	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.97	1.83	J	ng/L		93	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	1.75	J	ng/L		89	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	1.78	J	ng/L		90	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	1.74	J	ng/L		89	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	1.84	J	ng/L		93	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	1.99	J	ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	1.94	J	ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	1.89	J	ng/L		96	50 - 150
Perfluorononanoic acid (PFNA)	1.97	1.91	J	ng/L		97	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.97	1.51	J	ng/L		77	50 - 150

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-245671/16-A

Matrix: Water

Analysis Batch: 245945

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245671

Analyte			Spike	MRL	MRL	Unit	D	%Rec	%Rec		
			Added	Result	Qualifier			Limits			
Perfluorotridecanoic acid (PFTTrDA)			1.97	1.84	J	ng/L		93	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			1.97	1.81	J	ng/L		92	50 - 150		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			1.97	1.81	J	ng/L		92	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			1.97	1.71	J	ng/L		87	50 - 150		
Surrogate	MRL	MRL									
	%Recovery	Qualifier	Limits								
d5-NEtFOSAA	90		70 - 130								
13C2 PFHxA	94		70 - 130								
13C2 PFDA	97		70 - 130								
13C3-GenX	85		70 - 130								

Lab Sample ID: 380-229920-B-1-A MS

Matrix: Water

Analysis Batch: 245945

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245671

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		24.7	22.0		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.7	26.3		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		24.7	24.6		ng/L		100	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.7	26.2		ng/L		106	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.7	26.0		ng/L		105	70 - 130
Perfluorohexanoic acid (PFHxA)	4.9		24.7	29.1		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		24.7	24.5		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	3.1		24.7	27.4		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		24.7	24.5		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	5.0		24.7	31.1		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	4.4		24.7	29.6		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		24.7	26.5		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		24.7	25.8		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		24.7	21.7		ng/L		88	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		24.7	26.0		ng/L		105	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		24.7	24.6		ng/L		100	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<2.0		24.7	25.3		ng/L		103	70 - 130

Eurofins Pomona

QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-229920-B-1-A MS

Matrix: Water

Analysis Batch: 245945

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245671

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.7	23.6		ng/L		96	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
d5-NEtFOSAA	98		70 - 130						
13C2 PFHxA	97		70 - 130						
13C2 PFDA	100		70 - 130						
13C3-GenX	91		70 - 130						

Lab Sample ID: 380-229920-C-1-A MSD

Matrix: Water

Analysis Batch: 245945

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 245671

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		24.6	21.8		ng/L		88	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.6	25.6		ng/L		102	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		24.6	24.0		ng/L		97	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.6	25.0		ng/L		101	70 - 130	5	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.6	26.1		ng/L		106	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	4.9		24.6	27.9		ng/L		93	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		24.6	24.3		ng/L		99	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	3.1		24.6	26.9		ng/L		96	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		24.6	23.4		ng/L		95	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	5.0		24.6	30.0		ng/L		102	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	4.4		24.6	30.1		ng/L		104	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		24.6	26.1		ng/L		100	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		24.6	25.1		ng/L		102	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		24.6	22.2		ng/L		90	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.6	25.5		ng/L		104	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.6	25.1		ng/L		102	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.6	25.6		ng/L		104	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.6	24.6		ng/L		100	70 - 130	4	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	99		70 - 130								
13C2 PFHxA	95		70 - 130								
13C2 PFDA	100		70 - 130								

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QC Sample Results

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-229920-C-1-A MSD

Matrix: Water

Analysis Batch: 245945

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 245671

	<i>MSD</i>	<i>MSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C3-GenX	91		70 - 130

QC Association Summary

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 245239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229432-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-245239/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-245239/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-245239/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-229139-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-229139-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 245294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229432-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-245294/20-A	Method Blank	Total/NA	Water	533	
LCS 380-245294/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-245294/21-A	Lab Control Sample	Total/NA	Water	533	
380-229075-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-229075-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 245467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229432-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	245294
MBL 380-245294/20-A	Method Blank	Total/NA	Water	533	245294
LCS 380-245294/22-A	Lab Control Sample	Total/NA	Water	533	245294
MRL 380-245294/21-A	Lab Control Sample	Total/NA	Water	533	245294
380-229075-B-1-A MS	Matrix Spike	Total/NA	Water	533	245294
380-229075-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	245294

Analysis Batch: 245492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229432-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	245239
MBL 380-245239/21-A	Method Blank	Total/NA	Water	EPA 537.1 V2	245239
LCS 380-245239/23-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	245239
MRL 380-245239/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	245239
380-229139-B-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	245239
380-229139-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	245239

Prep Batch: 245550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229432-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-245550/20-A	Method Blank	Total/NA	Water	533	
LCS 380-245550/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-245550/21-A	Lab Control Sample	Total/NA	Water	533	
380-229601-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-229601-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 245655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229432-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	245550
MBL 380-245550/20-A	Method Blank	Total/NA	Water	533	245550
LCS 380-245550/22-A	Lab Control Sample	Total/NA	Water	533	245550
MRL 380-245550/21-A	Lab Control Sample	Total/NA	Water	533	245550
380-229601-B-1-A MS	Matrix Spike	Total/NA	Water	533	245550
380-229601-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	533	245550

Eurofins Pomona

QC Association Summary

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 245671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229432-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-245671/15-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-245671/17-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-245671/16-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-229920-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-229920-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 245945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229432-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	245671
MBL 380-245671/15-A	Method Blank	Total/NA	Water	EPA 537.1 V2	245671
LCS 380-245671/17-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	245671
MRL 380-245671/16-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	245671
380-229920-B-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	245671
380-229920-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	245671

Lab Chronicle

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

Job ID: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-1

Date Collected: 08/04/26 09:30

Matrix: Water

Date Received: 08/06/26 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			245550	E2HD	EA POM	08/10/26 16:45
Total/NA	Analysis	533		1	245655	Y5FM	EA POM	08/11/26 14:14
Total/NA	Prep	537.1 DW			245239	E9PK	EA POM	08/08/26 09:19
Total/NA	Analysis	EPA 537.1 V2		1	245492	Y5FM	EA POM	08/10/26 21:12

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-229432-2

Date Collected: 08/04/26 09:30

Matrix: Water

Date Received: 08/06/26 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			245294	N8NE	EA POM	08/09/26 16:40
Total/NA	Analysis	533		1	245467	Y5FM	EA POM	08/10/26 16:07
Total/NA	Prep	537.1 DW			245671	LM3A	EA POM	08/11/26 11:30
Total/NA	Analysis	EPA 537.1 V2		1	245945	Y5FM	EA POM	08/12/26 13:14

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: 380-229432-1
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 *

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

Method Summary

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

Job ID: 380-229432-1
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: 380-229432-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-229432-1	HALAWA SHAFT VIEWING POOL	Water	08/04/26 09:30	08/06/26 09:30	Hawaii
380-229432-2	FB HALAWA SHAFT VIEWING POOL	Water	08/04/26 09:30	08/06/26 09:30	Hawaii

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



ORIGIN ID: HIK
BWS CHEM LAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERTANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 05AUG26
ACTWGT: 62.00 LB
CAD: 238050552/NET14535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768

REF: (626) 306-1100

INV: PO:

DEPT:



THU - 06 AUG 10:30A
PRIORITY OVERNIGHT

1 of 2

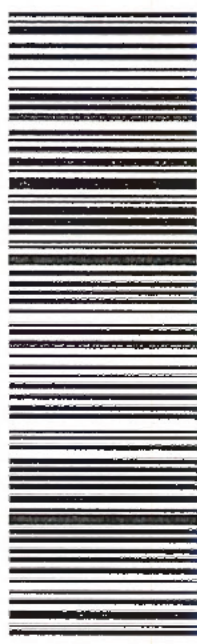
TRK# 8753 8015 4351

0201
MASTER #

91768

WM ONTA

CA-US ONT



(6314) S.O+O.2-5.2 961-70020
Mark Warrick 9/6/26 930

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-229432-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 229432

List Number: 1

Creator: Edrosa, Rey

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