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ANALYTICAL REPORT

PREPARED FOR

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

Generated 2/18/2025 2:19:21 PM

JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-135681-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

Compliance Statement

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

Authorization

Rachelle Arada

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Authorized for release by
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Table of Contents

Definitions/Glossary

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

Job ID: 380-135681-1
SDG: Weekly PFAS

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

Job Narrative
380-135681-1

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

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

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

Receipt
The samples were received on 2/13/2025 9:51 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 3.5°C.

PFAS
Methods EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results. HALAWA SHAFT VIEWING POOL (380-135681-1).

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

Detection Summary

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

Job ID: 380-135681-1
SDG: Weekly PFAS

Client Sample ID: HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-135681-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.5		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.8		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.9		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-135681-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-135681-1
SDG: Weekly PFAS

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-135681-1

Date Collected: 02/11/25 10:00
Date Received: 02/13/25 09:51

Matrix: Water

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		02/15/25 14:12	02/17/25 08:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluorohexanesulfonic acid (PFHxS)	**3.5**		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluorooctanesulfonic acid (PFOS)	**3.4**		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 08:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*110*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C6 PFDA	*97*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C5 PFHxA	*100*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C4 PFHpA	*107*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C8 PFOA	*106*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C9 PFNA	*100*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C7 PFUnA	*96*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C2 PFDoA	*103*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C4 PFBA	*104*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C5 PFPeA	*115*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C3 PFBS	*101*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C3 PFHxS	*103*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-135681-1
Date Collected: 02/11/25 10:00
Matrix: Water
Date Received: 02/13/25 09:51

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 PFOS	*102*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C2-4:2-FTS	*144*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C2-6:2-FTS	*122*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*
13C2-8:2-FTS	*99*		*50 - 200*	*02/15/25 14:12*	*02/17/25 08:19*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorooctanesulfonic acid (PFOS)	**3.8**		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorohexanoic acid (PFHxA)	**2.2**		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorohexanesulfonic acid (PFHxS)	**3.9**		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 01:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*102*		*70 - 130*	*02/14/25 17:00*	*02/16/25 01:53*	*1*
13C2 PFHxA	*112*		*70 - 130*	*02/14/25 17:00*	*02/16/25 01:53*	*1*
13C2 PFDA	*103*		*70 - 130*	*02/14/25 17:00*	*02/16/25 01:53*	*1*
13C3-GenX	*105*		*70 - 130*	*02/14/25 17:00*	*02/16/25 01:53*	*1*

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-135681-2
Date Collected: 02/11/25 10:00
Matrix: Water
Date Received: 02/13/25 09:51

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		02/15/25 14:12	02/17/25 11:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1

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

Job ID: 380-135681-1
SDG: Weekly PFAS

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL
Date Collected: 02/11/25 10:00
Date Received: 02/13/25 09:51

Lab Sample ID: 380-135681-2
Matrix: Water

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		02/15/25 14:12	02/17/25 11:21	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		02/15/25 14:12	02/17/25 11:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*101*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C6 PFDA	*102*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C5 PFHxA	*107*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C4 PFHpA	*108*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C8 PFOA	*109*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C9 PFNA	*105*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C7 PFUnA	*97*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C2 PFDoA	*97*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C4 PFBA	*106*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C5 PFPeA	*107*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C3 PFBS	*100*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C3 PFHxS	*105*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C8 PFOS	*103*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C2-4:2-FTS	*133*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C2-6:2-FTS	*121*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*
13C2-8:2-FTS	*101*		*50 - 200*	*02/15/25 14:12*	*02/17/25 11:21*	*1*

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

Job ID: 380-135681-1
SDG: Weekly PFAS

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL
Date Collected: 02/11/25 10:00
Date Received: 02/13/25 09:51

Lab Sample ID: 380-135681-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		02/14/25 17:00	02/16/25 02:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*104*		*70 - 130*	*02/14/25 17:00*	*02/16/25 02:04*	*1*
13C2 PFHxA	*110*		*70 - 130*	*02/14/25 17:00*	*02/16/25 02:04*	*1*
13C2 PFDA	*105*		*70 - 130*	*02/14/25 17:00*	*02/16/25 02:04*	*1*
13C3-GenX	*104*		*70 - 130*	*02/14/25 17:00*	*02/16/25 02:04*	*1*

Action Limit Summary

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

Job ID: 380-135681-1
SDG: Weekly PFAS

Client Sample ID: HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-135681-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.5		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.8		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.9		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-135681-2

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-135681-1
SDG: Weekly PFAS

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-135363-AF-1-A MS	Matrix Spike	105	111	100	106
380-135363-AG-1-A MSD	Matrix Spike Duplicate	102	112	101	108
380-135681-1	HALAWA SHAFT VIEWING POOL	102	112	103	105
380-135681-2	FB: HALAWA SHAFT VIEWING POOL	104	110	105	104
LCS 380-135396/24-A	Lab Control Sample	103	111	106	107
MBL 380-135396/22-A	Method Blank	101	113	103	108
MRL 380-135396/23-A	Lab Control Sample	98	106	102	103

Surrogate Legend

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
GenX = 13C3-GenX

Isotope Dilution Summary

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

Job ID: 380-135681-1
SDG: Weekly PFAS

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)	PFDoA (50-200)
380-135681-1	HALAWA SHAFT VIEWING POO	110	97	100	107	106	100	96	103
380-135681-1 MS	HALAWA SHAFT VIEWING POOL	102	104	104	106	104	102	99	104
380-135681-1 MSD	HALAWA SHAFT VIEWING POOL	104	104	106	110	108	105	101	106
380-135681-2	FB: HALAWA SHAFT VIEWING POOL	101	102	107	108	109	105	97	97
LCS 380-135549/22-A	Lab Control Sample	107	102	103	110	106	102	97	100
MBL 380-135549/20-A	Method Blank	110	104	105	112	110	105	100	111
MRL 380-135549/21-A	Lab Control Sample	104	101	103	111	108	103	99	104

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-135681-1	HALAWA SHAFT VIEWING POO	104	115	101	103	102	144	122	99
380-135681-1 MS	HALAWA SHAFT VIEWING POOL	105	117	103	107	106	141	121	103
380-135681-1 MSD	HALAWA SHAFT VIEWING POOL	106	115	104	109	104	146	123	100
380-135681-2	FB: HALAWA SHAFT VIEWING POOL	106	107	100	105	103	133	121	101
LCS 380-135549/22-A	Lab Control Sample	106	109	106	111	107	122	118	104
MBL 380-135549/20-A	Method Blank	110	111	105	115	107	127	117	100
MRL 380-135549/21-A	Lab Control Sample	107	110	105	113	108	124	114	97

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
13C7PUA = 13C7 PFUnA
PFDoA = 13C2 PFDoA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
42FTS = 13C2-4:2-FTS
62FTS = 13C2-6:2-FTS
82FTS = 13C2-8:2-FTS

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

Lab Sample ID: MBL 380-135549/20-A
Matrix: Water
Analysis Batch: 135735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 135549

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		02/15/25 14:12	02/17/25 07:51	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*110*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C6 PFDA	*104*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C5 PFHxA	*105*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C4 PFHpA	*112*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C8 PFOA	*110*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C9 PFNA	*105*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C7 PFUnA	*100*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C2 PFDoA	*111*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C4 PFBA	*110*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C5 PFPeA	*111*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C3 PFBS	*105*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*
13C3 PFHxS	*115*		*50 - 200*	*02/15/25 14:12*	*02/17/25 07:51*	*1*

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

Lab Sample ID: MBL 380-135549/20-A
Matrix: Water
Analysis Batch: 135735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 135549

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	107		50 - 200	02/15/25 14:12	02/17/25 07:51	1
13C2-4:2-FTS	127		50 - 200	02/15/25 14:12	02/17/25 07:51	1
13C2-6:2-FTS	117		50 - 200	02/15/25 14:12	02/17/25 07:51	1
13C2-8:2-FTS	100		50 - 200	02/15/25 14:12	02/17/25 07:51	1

Lab Sample ID: LCS 380-135549/22-A
Matrix: Water
Analysis Batch: 135735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135549

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	120		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	108		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	111		ng/L		92	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	116		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	117		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	120	118		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	120	123		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	116		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	121		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	120	124		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	120	121		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	120		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	120	118		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	123		ng/L		102	70 - 130
Perfluorobutanoic acid (PFBA)	120	122		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	120		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	123		ng/L		102	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	116		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	114		ng/L		95	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	123		ng/L		102	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	119		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	120	119		ng/L		99	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	123		ng/L		102	70 - 130

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

Lab Sample ID: LCS 380-135549/22-A
Matrix: Water
Analysis Batch: 135735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135549

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			120	117		ng/L		97	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*107*		*50 - 200*
13C6 PFDA	*102*		*50 - 200*
13C5 PFHxA	*103*		*50 - 200*
13C4 PFHpA	*110*		*50 - 200*
13C8 PFOA	*106*		*50 - 200*
13C9 PFNA	*102*		*50 - 200*
13C7 PFUnA	*97*		*50 - 200*
13C2 PFDoA	*100*		*50 - 200*
13C4 PFBA	*106*		*50 - 200*
13C5 PFPeA	*109*		*50 - 200*
13C3 PFBS	*106*		*50 - 200*
13C3 PFHxS	*111*		*50 - 200*
13C8 PFOS	*107*		*50 - 200*
13C2-4:2-FTS	*122*		*50 - 200*
13C2-6:2-FTS	*118*		*50 - 200*
13C2-8:2-FTS	*104*		*50 - 200*

Lab Sample ID: MRL 380-135549/21-A
Matrix: Water
Analysis Batch: 135735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135549

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.00	2.07	J	ng/L		103	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			2.00	1.85	J	ng/L		92	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			2.00	2.12	J	ng/L		106	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			2.00	2.10	J	ng/L		105	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			2.00	2.20	J	ng/L		110	50 - 150		
Perfluorodecanoic acid (PFDA)			2.00	2.26	J	ng/L		113	50 - 150		
Perfluorododecanoic acid (PFDoA)			2.00	2.19	J	ng/L		109	50 - 150		
Perfluoroheptanoic acid (PFHpA)			2.00	2.17	J	ng/L		108	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			2.00	2.16	J	ng/L		108	50 - 150		
Perfluorohexanoic acid (PFHxA)			2.00	2.26	J	ng/L		113	50 - 150		
Perfluorononanoic acid (PFNA)			2.00	2.15	J	ng/L		107	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			2.00	2.22	J	ng/L		111	50 - 150		
Perfluorooctanoic acid (PFOA)			2.00	2.06	J	ng/L		103	50 - 150		
Perfluoroundecanoic acid (PFUnA)			2.00	2.06	J	ng/L		103	50 - 150		
Perfluorobutanoic acid (PFBA)			2.00	2.04	J	ng/L		102	50 - 150		

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

Lab Sample ID: MRL 380-135549/21-A
Matrix: Water
Analysis Batch: 135735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135549

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.20	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.28	J	ng/L		114	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.45	J	ng/L		122	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.27	J	ng/L		113	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.03	J	ng/L		101	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*104*		*50 - 200*
13C6 PFDA	*101*		*50 - 200*
13C5 PFHxA	*103*		*50 - 200*
13C4 PFHpA	*111*		*50 - 200*
13C8 PFOA	*108*		*50 - 200*
13C9 PFNA	*103*		*50 - 200*
13C7 PFUnA	*99*		*50 - 200*
13C2 PFDoA	*104*		*50 - 200*
13C4 PFBA	*107*		*50 - 200*
13C5 PFPeA	*110*		*50 - 200*
13C3 PFBS	*105*		*50 - 200*
13C3 PFHxS	*113*		*50 - 200*
13C8 PFOS	*108*		*50 - 200*
13C2-4:2-FTS	*124*		*50 - 200*
13C2-6:2-FTS	*114*		*50 - 200*
13C2-8:2-FTS	*97*		*50 - 200*

Lab Sample ID: 380-135681-1 MS
Matrix: Water
Analysis Batch: 135735

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 135549

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		60.4	59.3		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	56.0		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	63.7		ng/L		105	70 - 130

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

Lab Sample ID: 380-135681-1 MS
Matrix: Water
Analysis Batch: 135735

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 135549

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		60.4	64.4		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	63.9		ng/L		105	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	61.5		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	63.1		ng/L		105	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	64.1		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	3.5		60.4	66.2		ng/L		104	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	64.5		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	63.3		ng/L		105	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.4		60.4	67.2		ng/L		106	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	63.0		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	64.1		ng/L		106	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	64.2		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	66.6		ng/L		110	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	63.8		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	62.9		ng/L		104	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	59.5		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	62.4		ng/L		103	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	67.0		ng/L		111	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	63.6		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	61.6		ng/L		101	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	63.0		ng/L		104	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	64.3		ng/L		107	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*102*		*50 - 200*
13C6 PFDA	*104*		*50 - 200*
13C5 PFHxA	*104*		*50 - 200*
13C4 PFHpA	*106*		*50 - 200*
13C8 PFOA	*104*		*50 - 200*
13C9 PFNA	*102*		*50 - 200*
13C7 PFUnA	*99*		*50 - 200*
13C2 PFDoA	*104*		*50 - 200*
13C4 PFBA	*105*		*50 - 200*
13C5 PFPeA	*117*		*50 - 200*
13C3 PFBS	*103*		*50 - 200*
13C3 PFHxS	*107*		*50 - 200*
13C8 PFOS	*106*		*50 - 200*

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

Lab Sample ID: 380-135681-1 MS
Matrix: Water
Analysis Batch: 135735

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 135549

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	141		50 - 200
13C2-6:2-FTS	121		50 - 200
13C2-8:2-FTS	103		50 - 200

Lab Sample ID: 380-135681-1 MSD
Matrix: Water
Analysis Batch: 135735

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 135549

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		60.4	59.8		ng/L		99	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	55.2		ng/L		92	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	62.0		ng/L		103	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	63.4		ng/L		105	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	62.2		ng/L		102	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		60.4	59.9		ng/L		99	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	58.8		ng/L		97	70 - 130	7	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	61.8		ng/L		101	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	3.5		60.4	65.1		ng/L		102	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	65.1		ng/L		105	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.4	63.5		ng/L		105	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	3.4		60.4	65.1		ng/L		102	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		60.4	62.6		ng/L		102	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	60.6		ng/L		100	70 - 130	6	30
Perfluorobutanoic acid (PFBA)	<2.0		60.4	60.6		ng/L		100	70 - 130	6	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	63.5		ng/L		105	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	61.7		ng/L		102	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	64.1		ng/L		106	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	51.0		ng/L		85	70 - 130	15	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	60.0		ng/L		99	70 - 130	4	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	63.5		ng/L		105	70 - 130	5	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	63.3		ng/L		105	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	62.7		ng/L		103	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	63.8		ng/L		106	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	61.1		ng/L		101	70 - 130	5	30

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	104		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	106		50 - 200
13C4 PFHpA	110		50 - 200
13C8 PFOA	108		50 - 200
13C9 PFNA	105		50 - 200
13C7 PFUnA	101		50 - 200
13C2 PFDoA	106		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	115		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	146		50 - 200
13C2-6:2-FTS	123		50 - 200
13C2-8:2-FTS	100		50 - 200

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

Lab Sample ID: MBL 380-135396/22-A
Matrix: Water
Analysis Batch: 135554

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 135396

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		02/14/25 17:00	02/15/25 21:55	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	101		70 - 130	02/14/25 17:00	02/15/25 21:55	1
13C2 PFHxA	113		70 - 130	02/14/25 17:00	02/15/25 21:55	1
13C2 PFDA	103		70 - 130	02/14/25 17:00	02/15/25 21:55	1

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

Lab Sample ID: MBL 380-135396/22-A
Matrix: Water
Analysis Batch: 135554

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 135396

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	108		70 - 130	02/14/25 17:00	02/15/25 21:55	1

Lab Sample ID: LCS 380-135396/24-A
Matrix: Water
Analysis Batch: 135554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135396

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.0	53.0		ng/L		106	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.0	54.2		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.0	50.6		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.0	55.8		ng/L		112	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.0	51.5		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	50.0	55.2		ng/L		110	70 - 130
Perfluorododecanoic acid (PFDoA)	50.0	52.2		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	50.0	53.8		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	50.0	51.8		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.0	56.2		ng/L		112	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.0	53.7		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.0	55.9		ng/L		112	70 - 130
Perfluorononanoic acid (PFNA)	50.0	53.7		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.0	54.6		ng/L		109	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.0	52.9		ng/L		106	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.0	53.8		ng/L		108	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.0	51.2		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.0	53.9		ng/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	111		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	107		70 - 130

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

Lab Sample ID: MRL 380-135396/23-A
Matrix: Water
Analysis Batch: 135554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135396

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.09	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.07	J	ng/L		103	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.12	J	ng/L		105	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.23	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.08	J	ng/L		103	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.97	J	ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.30	J	ng/L		115	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.34	J	ng/L		116	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.10	J	ng/L		104	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.06	J	ng/L		103	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.02	J	ng/L		101	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.16	J	ng/L		108	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*98*		*70 - 130*
13C2 PFHxA	*106*		*70 - 130*
13C2 PFDA	*102*		*70 - 130*
13C3-GenX	*103*		*70 - 130*

Lab Sample ID: 380-135363-AF-1-A MS
Matrix: Water
Analysis Batch: 135554

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 135396

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.3	53.3		ng/L		106	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.3		50.3	58.5		ng/L		110	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.3	50.8		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.3	53.8		ng/L		107	70 - 130

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

Lab Sample ID: 380-135363-AF-1-A MS
Matrix: Water
Analysis Batch: 135554

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 135396

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.3	51.8		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.3	57.7		ng/L		111	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.3	50.8		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	3.2		50.3	57.0		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.3	51.6		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	4.2		50.3	60.8		ng/L		113	70 - 130
Perfluorobutanesulfonic acid (PFBS)	4.5		50.3	59.9		ng/L		110	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.3	55.5		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.3	51.4		ng/L		102	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.3	54.2		ng/L		108	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.3	51.3		ng/L		102	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.3	53.8		ng/L		107	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.3	51.4		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.3	53.5		ng/L		106	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*105*		*70 - 130*
13C2 PFHxA	*111*		*70 - 130*
13C2 PFDA	*100*		*70 - 130*
13C3-GenX	*106*		*70 - 130*

Lab Sample ID: 380-135363-AG-1-A MSD
Matrix: Water
Analysis Batch: 135554

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 135396

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.3	54.0		ng/L		107	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	3.3		50.3	57.0		ng/L		107	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.3	51.6		ng/L		103	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.3	54.2		ng/L		108	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.3	50.7		ng/L		101	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.3	59.1		ng/L		114	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.3	52.7		ng/L		105	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	3.2		50.3	58.1		ng/L		109	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		50.3	50.5		ng/L		100	70 - 130	2	30

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

Lab Sample ID: 380-135363-AG-1-A MSD
Matrix: Water
Analysis Batch: 135554

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 135396

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	4.2		50.3	59.9		ng/L		111	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	4.5		50.3	59.4		ng/L		109	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.3	56.8		ng/L		110	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		50.3	54.8		ng/L		109	70 - 130	6	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.3	54.4		ng/L		108	70 - 130	0	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.3	51.5		ng/L		102	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.3	52.1		ng/L		104	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.3	50.2		ng/L		100	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.3	54.3		ng/L		108	70 - 130	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*102*		*70 - 130*
13C2 PFHxA	*112*		*70 - 130*
13C2 PFDA	*101*		*70 - 130*
13C3-GenX	*108*		*70 - 130*

QC Association Summary

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

Job ID: 380-135681-1
SDG: Weekly PFAS

LCMS

Prep Batch: 135396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-135681-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-135681-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-135396/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-135396/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-135396/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-135363-AF-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-135363-AG-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 135549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-135681-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-135681-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-135549/20-A	Method Blank	Total/NA	Water	533	
LCS 380-135549/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-135549/21-A	Lab Control Sample	Total/NA	Water	533	
380-135681-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-135681-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	

Analysis Batch: 135554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-135681-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	135396
380-135681-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	135396
MBL 380-135396/22-A	Method Blank	Total/NA	Water	537.1	135396
LCS 380-135396/24-A	Lab Control Sample	Total/NA	Water	537.1	135396
MRL 380-135396/23-A	Lab Control Sample	Total/NA	Water	537.1	135396
380-135363-AF-1-A MS	Matrix Spike	Total/NA	Water	537.1	135396
380-135363-AG-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	135396

Analysis Batch: 135735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-135681-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	135549
380-135681-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	135549
MBL 380-135549/20-A	Method Blank	Total/NA	Water	533	135549
LCS 380-135549/22-A	Lab Control Sample	Total/NA	Water	533	135549
MRL 380-135549/21-A	Lab Control Sample	Total/NA	Water	533	135549
380-135681-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	135549
380-135681-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	135549

Lab Chronicle

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

Job ID: 380-135681-1
SDG: Weekly PFAS

Client Sample ID: HALAWA SHAFT VIEWING POOL
Lab Sample ID: 380-135681-1
Date Collected: 02/11/25 10:00
Matrix: Water
Date Received: 02/13/25 09:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			135549	N8NE	EA POM	02/15/25 14:12
Total/NA	Analysis	533		1	135735	SZ9R	EA POM	02/17/25 08:19
Total/NA	Prep	537.1 DW			135396	E9PK	EA POM	02/14/25 17:00
Total/NA	Analysis	537.1		1	135554	M7ML	EA POM	02/16/25 01:53

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL
Lab Sample ID: 380-135681-2
Date Collected: 02/11/25 10:00
Matrix: Water
Date Received: 02/13/25 09:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			135549	N8NE	EA POM	02/15/25 14:12
Total/NA	Analysis	533		1	135735	SZ9R	EA POM	02/17/25 11:21
Total/NA	Prep	537.1 DW			135396	E9PK	EA POM	02/14/25 17:00
Total/NA	Analysis	537.1		1	135554	M7ML	EA POM	02/16/25 02:04

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

Accreditation/Certification Summary

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

Job ID: 380-135681-1
SDG: Weekly PFAS

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-25 *

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

Method Summary

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

Job ID: 380-135681-1
SDG: Weekly PFAS

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

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

Job ID: 380-135681-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-135681-1	HALAWA SHAFT VIEWING POOL	Water	02/11/25 10:00	02/13/25 09:51
380-135681-2	FB: HALAWA SHAFT VIEWING POOL	Water	02/11/25 10:00	02/13/25 09:51

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone (626) 386-1100

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Ryan Greer	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-28005-2757 1
Client Contact: Dr Ron Fenstemacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: HI	Page: Page 1 of 1
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State Zip: HI 96843	Compliance Project: Δ Yes Δ No			
Phone: 808-748-5091(Tel)	PO #: C20525101 exp 05312023			
Email: RFENSTEMACHER@hbws org	WO #:			
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site: Hawaii	SSOW#:			

Analysis Requested

Preservation Codes
R - NaThioSO4
RA - NaThio/HCl
Q - Na2SO3
QA - Na2SO3/HCl
Y - Trizma
I - NH4 Acetate

Other:

380-135681 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	625.1, 625.1_SIM	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18	625.2_PREC - (MOD) 625plus Plus TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	RA	Q	QA	Y	I		
Halawa Shaft Viewing Pool	2/11/25	1000		Water							3	3		
FB Halawa Shaft Viewing Pool	2/11/25	1000		Water							1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FedEx 7720 3975 2049
Relinquished by: [redacted]	Date/Time: 2/12/25 1300	Company: HBWS	Received by: Mark Urrutia Date/Time: 2/13/25 950 Company: EEPE
Relinquished by:	Date/Time:	Company:	Received by: Date/Time: Company:
Relinquished by:	Date/Time:	Company:	Received by: Date/Time: Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: (63(A) 3.2+0.3 3.5 ice-frozen

Ver: 04/02/2024

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-135681-1
SDG Number: Weekly PFAS

Login Number: 135681
List Number: 1
Creator: Do, Michelle

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	