

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
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Honolulu, Hawaii 96843

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JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-138071-1

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization



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Authorized for release by
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Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Action Limit Summary	11
Surrogate Summary	12
Isotope Dilution Summary	13
QC Sample Results	14
QC Association Summary	31
Lab Chronicle	33
Certification Summary	34
Method Summary	35
Sample Summary	36
Chain of Custody	37
Receipt Checklists	38

Definitions/Glossary

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

Job ID: 380-138071-1
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

Case Narrative

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

Job ID: 380-138071-1

Job ID: 380-138071-1

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Job Narrative 380-138071-1

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 2/27/2025 10:03 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C.

PFAS

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

Detection Summary

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

Job ID: 380-138071-1
SDG: Weekly PFAS

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-138071-1

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)	3.5		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: 380-138071-2

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: 380-138071-1
SDG: Weekly PFAS

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-138071-1

Date Collected: 02/25/25 10:00

Matrix: Water

Date Received: 02/27/25 10:03

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		03/04/25 14:24	03/05/25 21:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluorohexanesulfonic acid (PFHxS)	3.5		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		03/04/25 14:24	03/05/25 21:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C6 PFDA	78		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C5 PFHxA	82		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C4 PFHpA	81		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C8 PFOA	81		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C9 PFNA	77		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C7 PFUnA	80		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C2 PFDoA	82		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C4 PFBA	96		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C5 PFPeA	98		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C3 PFBS	109		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C3 PFHxS	108		50 - 200	03/04/25 14:24	03/05/25 21:02	1

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Client Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-138071-1

Date Collected: 02/25/25 10:00

Matrix: Water

Date Received: 02/27/25 10:03

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	111		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C2-4:2-FTS	141		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C2-6:2-FTS	154		50 - 200	03/04/25 14:24	03/05/25 21:02	1
13C2-8:2-FTS	123		50 - 200	03/04/25 14:24	03/05/25 21:02	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		02/28/25 15:50	03/01/25 10:30	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluorohexanesulfonic acid (PFHxS)	3.9		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 10:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130			02/28/25 15:50	03/01/25 10:30	1
13C2 PFHxA	110		70 - 130			02/28/25 15:50	03/01/25 10:30	1
13C2 PFDA	113		70 - 130			02/28/25 15:50	03/01/25 10:30	1
13C3-GenX	111		70 - 130			02/28/25 15:50	03/01/25 10:30	1

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-138071-2

Date Collected: 02/25/25 10:00

Matrix: Water

Date Received: 02/27/25 10:03

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-138071-2

Date Collected: 02/25/25 10:00

Matrix: Water

Date Received: 02/27/25 10:03

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		03/04/25 14:26	03/05/25 11:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		03/04/25 14:26	03/05/25 11:57	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C6 PFDA	107		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C5 PFHxA	103		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C4 PFHpA	109		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C8 PFOA	113		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C9 PFNA	110		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C7 PFUnA	102		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C2 PFDoA	100		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C4 PFBA	114		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C5 PFPeA	116		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C3 PFBS	105		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C3 PFHxS	106		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C8 PFOS	112		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C2-4:2-FTS	126		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C2-6:2-FTS	134		50 - 200	03/04/25 14:26	03/05/25 11:57	1
13C2-8:2-FTS	116		50 - 200	03/04/25 14:26	03/05/25 11:57	1

Client Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-138071-2

Date Collected: 02/25/25 10:00

Matrix: Water

Date Received: 02/27/25 10:03

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		02/28/25 15:50	03/01/25 13:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/28/25 15:50	03/01/25 13:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	95		70 - 130			02/28/25 15:50	03/01/25 13:33	1
13C2 PFHxA	107		70 - 130			02/28/25 15:50	03/01/25 13:33	1
13C2 PFDA	104		70 - 130			02/28/25 15:50	03/01/25 13:33	1
13C3-GenX	103		70 - 130			02/28/25 15:50	03/01/25 13:33	1

Action Limit Summary

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

Job ID: 380-138071-1
SDG: Weekly PFAS

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-138071-1

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)	3.5		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)	3.5		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	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: 380-138071-2

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-138071-1
 SDG: Weekly PFAS

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

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)
380-138071-1	HALAWA SHAFT VIEWING POC	99	110	113	111
380-138071-1 MS	HALAWA SHAFT VIEWING POOL	96	107	106	105
380-138071-1 MSD	HALAWA SHAFT VIEWING POOL	98	116	115	112
380-138071-2	FB: HALAWA SHAFT VIEWING POOL	95	107	104	103
LCS 380-138854/22-A	Lab Control Sample	98	108	108	106
MBL 380-138854/20-A	Method Blank	93	105	108	108
MRL 380-138854/21-A	Lab Control Sample	99	112	109	104

Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX

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

Isotope Dilution Summary

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

Job ID: 380-138071-1
 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)
380-137691-B-1-A MS	Matrix Spike	104	107	108	107	110	108	109	107
380-137691-C-1-A MSD	Matrix Spike Duplicate	110	111	105	105	109	105	105	109
380-138071-1	HALAWA SHAFT VIEWING POOL	79	78	82	81	81	77	80	82
380-138071-2	FB: HALAWA SHAFT VIEWING POOL	92	107	103	109	113	110	102	100
380-138072-E-1-A MS	Matrix Spike	103	105	100	106	109	109	99	98
380-138072-F-1-A MSD	Matrix Spike Duplicate	102	105	98	101	103	107	98	101
LCS 380-139600/22-A	Lab Control Sample	98	105	103	105	105	104	104	105
LCS 380-139601/14-A	Lab Control Sample	102	104	97	104	107	105	88	90
MBL 380-139600/20-A	Method Blank	111	112	113	120	117	114	111	113
MBL 380-139601/12-A	Method Blank	106	102	103	109	111	109	96	95
MRL 380-139600/21-A	Lab Control Sample	96	102	104	109	108	106	104	99
MRL 380-139601/13-A	Lab Control Sample	102	105	103	109	110	108	101	102

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)
380-137691-B-1-A MS	Matrix Spike	106	113	110	108	111	123	114	111
380-137691-C-1-A MSD	Matrix Spike Duplicate	107	113	108	108	108	119	118	113
380-138071-1	HALAWA SHAFT VIEWING POOL	96	98	109	108	111	141	154	123
380-138071-2	FB: HALAWA SHAFT VIEWING POOL	114	116	105	106	112	126	134	116
380-138072-E-1-A MS	Matrix Spike	109	115	104	103	107	122	121	107
380-138072-F-1-A MSD	Matrix Spike Duplicate	104	108	102	103	109	122	121	107
LCS 380-139600/22-A	Lab Control Sample	105	109	111	107	110	116	116	109
LCS 380-139601/14-A	Lab Control Sample	109	111	98	103	106	126	117	107
MBL 380-139600/20-A	Method Blank	116	115	118	116	119	142	130	117
MBL 380-139601/12-A	Method Blank	117	118	104	105	106	128	125	108
MRL 380-139600/21-A	Lab Control Sample	109	111	112	105	109	129	116	115
MRL 380-139601/13-A	Lab Control Sample	112	109	104	105	115	137	131	114

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

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-139600/20-A
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 139600

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		03/04/25 14:24	03/05/25 17:13	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	111		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C6 PFDA	112		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C5 PFHxA	113		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C4 PFHpA	120		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C8 PFOA	117		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C9 PFNA	114		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C7 PFUnA	111		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C2 PFDoA	113		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C4 PFBA	116		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C5 PFPeA	115		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C3 PFBS	118		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C3 PFHxS	116		50 - 200	03/04/25 14:24	03/05/25 17:13	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-139600/20-A
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 139600

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	119		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C2-4:2-FTS	142		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C2-6:2-FTS	130		50 - 200	03/04/25 14:24	03/05/25 17:13	1
13C2-8:2-FTS	117		50 - 200	03/04/25 14:24	03/05/25 17:13	1

Lab Sample ID: LCS 380-139600/22-A
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139600

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	121	106		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	121	107		ng/L		89	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	121	120		ng/L		99	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	121	110		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	121	114		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	121	113		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	121	119		ng/L		98	70 - 130
Perfluoroheptanoic acid (PFHpA)	121	116		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	121	115		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	121	118		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	121	119		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	121	112		ng/L		93	70 - 130
Perfluorooctanoic acid (PFOA)	121	117		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	121	115		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	121	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	121	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	121	112		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	121	118		ng/L		97	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	121	116		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	121	104		ng/L		86	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	121	113		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	121	119		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	121	116		ng/L		96	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	121	103		ng/L		85	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-139600/22-A
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139600

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	121	112		ng/L		93	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	98		50 - 200				
13C6 PFDA	105		50 - 200				
13C5 PFHxA	103		50 - 200				
13C4 PFHpA	105		50 - 200				
13C8 PFOA	105		50 - 200				
13C9 PFNA	104		50 - 200				
13C7 PFUnA	104		50 - 200				
13C2 PFDoA	105		50 - 200				
13C4 PFBA	105		50 - 200				
13C5 PFPeA	109		50 - 200				
13C3 PFBS	111		50 - 200				
13C3 PFHxS	107		50 - 200				
13C8 PFOS	110		50 - 200				
13C2-4:2-FTS	116		50 - 200				
13C2-6:2-FTS	116		50 - 200				
13C2-8:2-FTS	109		50 - 200				

Lab Sample ID: MRL 380-139600/21-A
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139600

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.18	J	ng/L		109	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.01	J	ng/L		100	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.20	J	ng/L		109	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.16	J	ng/L		107	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.33	J	ng/L		116	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.42	J	ng/L		120	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.14	J	ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.25	J	ng/L		112	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.25	J	ng/L		112	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.24	J	ng/L		111	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.08	J	ng/L		103	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.07	J	ng/L		103	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-139600/21-A
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139600

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.32	J	ng/L		115	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.17	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.51	J	ng/L		125	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.58	J	ng/L		128	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.85	J	ng/L		92	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.25	J	ng/L		112	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.00	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.15	J	ng/L		107	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	96		50 - 200
13C6 PFDA	102		50 - 200
13C5 PFHxA	104		50 - 200
13C4 PFHpA	109		50 - 200
13C8 PFOA	108		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	104		50 - 200
13C2 PFDoA	99		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	112		50 - 200
13C3 PFHxS	105		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	129		50 - 200
13C2-6:2-FTS	116		50 - 200
13C2-8:2-FTS	115		50 - 200

Lab Sample ID: 380-137691-B-1-A MS
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 139600

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		121	107		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	105		ng/L		87	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	117		ng/L		97	70 - 130

QC Sample Results

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

Job ID: 380-138071-1
 SDG: Weekly PFAS

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

Lab Sample ID: 380-137691-B-1-A MS
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 139600

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		121	109		ng/L		90	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	112		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	118		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	121		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	116		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	115		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	118		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	119		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	108		ng/L		89	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	113		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	114		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	119		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	110		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	114		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	96.2		ng/L		79	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	103		ng/L		85	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	120		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	123		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	118		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	100		ng/L		83	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	112		ng/L		92	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	104		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	108		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	110		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	107		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	110		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	111		50 - 200

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-137691-B-1-A MS
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 139600

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	123		50 - 200
13C2-6:2-FTS	114		50 - 200
13C2-8:2-FTS	111		50 - 200

Lab Sample ID: 380-137691-C-1-A MSD
Matrix: Water
Analysis Batch: 139920

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 139600

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	109		ng/L		91	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	107		ng/L		88	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	119		ng/L		99	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	108		ng/L		90	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	113		ng/L		93	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		121	115		ng/L		95	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	115		ng/L		96	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	118		ng/L		98	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	113		ng/L		93	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		121	117		ng/L		97	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		121	119		ng/L		98	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	113		ng/L		93	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		121	115		ng/L		95	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	117		ng/L		97	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		121	116		ng/L		96	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	113		ng/L		94	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	109		ng/L		90	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	111		ng/L		92	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	95.6		ng/L		79	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	107		ng/L		89	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	111		ng/L		92	70 - 130	7	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	123		ng/L		102	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		121	114		ng/L		94	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	102		ng/L		84	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	113		ng/L		93	70 - 130	1	30

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QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	110		50 - 200
13C6 PFDA	111		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	105		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	105		50 - 200
13C7 PFUnA	105		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	119		50 - 200
13C2-6:2-FTS	118		50 - 200
13C2-8:2-FTS	113		50 - 200

Lab Sample ID: MBL 380-139601/12-A
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 139601

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1

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QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-139601/12-A
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 139601

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		03/04/25 14:26	03/05/25 10:22	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	106		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C6 PFDA	102		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C5 PFHxA	103		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C4 PFHpA	109		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C8 PFOA	111		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C9 PFNA	109		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C7 PFUnA	96		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C2 PFDoA	95		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C4 PFBA	117		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C5 PFPeA	118		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C3 PFBS	104		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C3 PFHxS	105		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C8 PFOS	106		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C2-4:2-FTS	128		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C2-6:2-FTS	125		50 - 200	03/04/25 14:26	03/05/25 10:22	1
13C2-8:2-FTS	108		50 - 200	03/04/25 14:26	03/05/25 10:22	1

Lab Sample ID: LCS 380-139601/14-A
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139601

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	42.3		ng/L		70	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	43.8		ng/L		73	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	57.9		ng/L		96	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	51.1		ng/L		85	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	56.0		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	52.6		ng/L		87	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	56.4		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	55.5		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	53.9		ng/L		89	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	58.5		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	60.2	52.4		ng/L		87	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	52.0		ng/L		86	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	51.7		ng/L		86	70 - 130

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QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-139601/14-A
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139601

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	60.2	55.8		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	56.6		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	53.0		ng/L		88	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	53.7		ng/L		89	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	54.8		ng/L		91	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	53.6		ng/L		89	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	52.4		ng/L		87	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	54.5		ng/L		91	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	56.9		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	53.7		ng/L		89	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	53.0		ng/L		88	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.2	53.9		ng/L		89	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	107		50 - 200
13C9 PFNA	105		50 - 200
13C7 PFUnA	88		50 - 200
13C2 PFDoA	90		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	126		50 - 200
13C2-6:2-FTS	117		50 - 200
13C2-8:2-FTS	107		50 - 200

Lab Sample ID: MRL 380-139601/13-A
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139601

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.60	J	ng/L		79	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.51	J	ng/L		75	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-139601/13-A
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139601

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.12	J	ng/L		106	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.04	J	ng/L		102	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.14	J	ng/L		107	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	1.92	J	ng/L		95	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	1.88	J	ng/L		94	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.87	J	ng/L		93	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.09	J	ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.14	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.07	J	ng/L		103	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.79	J	ng/L		89	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.02	J	ng/L		101	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.14	J	ng/L		106	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.94	J	ng/L		97	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.91	J	ng/L		95	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	109		50 - 200
13C8 PFOA	110		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	101		50 - 200
13C2 PFDoA	102		50 - 200
13C4 PFBA	112		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	105		50 - 200

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-139601/13-A
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139601

<i>Isotope Dilution</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C8 PFOS	115		50 - 200
13C2-4:2-FTS	137		50 - 200
13C2-6:2-FTS	131		50 - 200
13C2-8:2-FTS	114		50 - 200

Lab Sample ID: 380-138072-E-1-A MS
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 139601

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.6	45.6		ng/L		75	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.6	45.8		ng/L		76	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.6	57.1		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.6	56.0		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.6	55.7		ng/L		89	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.6	55.3		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.6	58.4		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.6	56.3		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.6	57.2		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	2.0		60.6	59.2		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.6	52.3		ng/L		86	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.6	54.2		ng/L		86	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.6	52.1		ng/L		84	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.6	53.9		ng/L		89	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.6	58.2		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.6	58.0		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.6	58.0		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.6	54.8		ng/L		90	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.6	50.2		ng/L		83	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.6	50.9		ng/L		84	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.6	55.9		ng/L		92	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.6	58.0		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	2.2		60.6	56.1		ng/L		89	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.6	53.1		ng/L		88	70 - 130

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-138072-E-1-A MS
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 139601

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.6	55.0		ng/L		91	70 - 130
MS MS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	103		50 - 200						
13C6 PFDA	105		50 - 200						
13C5 PFHxA	100		50 - 200						
13C4 PFHpA	106		50 - 200						
13C8 PFOA	109		50 - 200						
13C9 PFNA	109		50 - 200						
13C7 PFUnA	99		50 - 200						
13C2 PFDoA	98		50 - 200						
13C4 PFBA	109		50 - 200						
13C5 PFPeA	115		50 - 200						
13C3 PFBS	104		50 - 200						
13C3 PFHxS	103		50 - 200						
13C8 PFOS	107		50 - 200						
13C2-4:2-FTS	122		50 - 200						
13C2-6:2-FTS	121		50 - 200						
13C2-8:2-FTS	107		50 - 200						

Lab Sample ID: 380-138072-F-1-A MSD
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 139601

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.5	43.7		ng/L		72	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.5	44.5		ng/L		74	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.5	56.7		ng/L		94	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.5	49.7		ng/L		82	70 - 130	12	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.5	57.6		ng/L		93	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		60.5	52.7		ng/L		87	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.5	57.1		ng/L		94	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.5	57.5		ng/L		93	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.5	56.6		ng/L		91	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	2.0		60.5	56.4		ng/L		90	70 - 130	5	30
Perfluorononanoic acid (PFNA)	<2.0		60.5	52.1		ng/L		86	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.5	53.5		ng/L		85	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		60.5	54.2		ng/L		87	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.5	54.7		ng/L		90	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		60.5	57.0		ng/L		93	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-138072-F-1-A MSD
Matrix: Water
Analysis Batch: 139825

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 139601

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		60.5	57.0		ng/L		94	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.5	58.3		ng/L		96	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.5	52.4		ng/L		87	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.5	48.9		ng/L		81	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.5	48.6		ng/L		80	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.5	53.5		ng/L		88	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.5	59.0		ng/L		97	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	2.2		60.5	57.2		ng/L		91	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.5	52.5		ng/L		87	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.5	54.4		ng/L		90	70 - 130	1	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	101		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	98		50 - 200
13C2 PFDoA	101		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	122		50 - 200
13C2-6:2-FTS	121		50 - 200
13C2-8:2-FTS	107		50 - 200

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

Lab Sample ID: MBL 380-138854/20-A
Matrix: Water
Analysis Batch: 138985

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 138854

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		02/28/25 15:50	03/01/25 09:58	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1

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QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-138854/20-A
Matrix: Water
Analysis Batch: 138985

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 138854

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		02/28/25 15:50	03/01/25 09:58	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	93		70 - 130	02/28/25 15:50	03/01/25 09:58	1
13C2 PFHxA	105		70 - 130	02/28/25 15:50	03/01/25 09:58	1
13C2 PFDA	108		70 - 130	02/28/25 15:50	03/01/25 09:58	1
13C3-GenX	108		70 - 130	02/28/25 15:50	03/01/25 09:58	1

Lab Sample ID: LCS 380-138854/22-A
Matrix: Water
Analysis Batch: 138985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 138854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	29.0		ng/L		115	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	27.9		ng/L		111	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	28.6		ng/L		114	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	29.5		ng/L		118	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	26.7		ng/L		106	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	29.0		ng/L		116	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	28.0		ng/L		111	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	28.4		ng/L		113	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	28.8		ng/L		115	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	29.3		ng/L		117	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	29.3		ng/L		117	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	30.0		ng/L		120	70 - 130
Perfluorononanoic acid (PFNA)	25.1	28.5		ng/L		114	70 - 130

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QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-138854/22-A
Matrix: Water
Analysis Batch: 138985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 138854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	25.1	27.1		ng/L		108	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	26.7		ng/L		106	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	28.1		ng/L		112	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	29.8		ng/L		119	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	29.1		ng/L		116	70 - 130
		LCS LCS					
Surrogate	%Recovery	Qualifier	Limits				
d5-NEtFOSAA	98		70 - 130				
13C2 PFHxA	108		70 - 130				
13C2 PFDA	108		70 - 130				
13C3-GenX	106		70 - 130				

Lab Sample ID: MRL 380-138854/21-A
Matrix: Water
Analysis Batch: 138985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 138854

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.37	J	ng/L		118	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.33	J	ng/L		116	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.27	J	ng/L		113	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.35	J	ng/L		117	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.38	J	ng/L		119	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.31	J	ng/L		115	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.20	J	ng/L		110	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.37	J	ng/L		118	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.37	J	ng/L		118	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.30	J	ng/L		114	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.31	J	ng/L		115	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.05	J	ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.25	J	ng/L		112	50 - 150

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-138854/21-A
Matrix: Water
Analysis Batch: 138985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 138854

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.38	J	ng/L		118	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.33	J	ng/L		116	50 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
d5-NEtFOSAA	99		70 - 130				
13C2 PFHxA	112		70 - 130				
13C2 PFDA	109		70 - 130				
13C3-GenX	104		70 - 130				

Lab Sample ID: 380-138071-1 MS
Matrix: Water
Analysis Batch: 138985

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 138854

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		50.2	56.7		ng/L		113	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.5		50.2	57.8		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	54.5		ng/L		109	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	56.2		ng/L		112	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	52.2		ng/L		104	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	58.2		ng/L		113	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	53.9		ng/L		107	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	56.8		ng/L		111	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	53.9		ng/L		107	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	3.9		50.2	57.8		ng/L		108	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	55.0		ng/L		109	70 - 130
Perfluoroheptanoic acid (PFHpA)	2.0		50.2	56.3		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	54.7		ng/L		109	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	53.2		ng/L		106	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	50.6		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	54.9		ng/L		109	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	58.3		ng/L		116	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	56.2		ng/L		112	70 - 130

QC Sample Results

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

Job ID: 380-138071-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-138071-1 MS
Matrix: Water
Analysis Batch: 138985

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 138854

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	96		70 - 130
13C2 PFHxA	107		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	105		70 - 130

Lab Sample ID: 380-138071-1 MSD
Matrix: Water
Analysis Batch: 138985

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 138854

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec		RPD	RPD Limit
				Result	Qualifier				Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	58.2		ng/L		116	70 - 130	3	30	
Perfluorooctanesulfonic acid (PFOS)	3.5		50.2	59.8		ng/L		112	70 - 130	3	30	
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	57.2		ng/L		114	70 - 130	5	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	56.4		ng/L		112	70 - 130	1	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	53.1		ng/L		106	70 - 130	2	30	
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	58.8		ng/L		114	70 - 130	1	30	
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	55.2		ng/L		110	70 - 130	2	30	
Perfluorooctanoic acid (PFOA)	<2.0		50.2	60.2		ng/L		118	70 - 130	6	30	
Perfluorodecanoic acid (PFDA)	<2.0		50.2	56.8		ng/L		113	70 - 130	5	30	
Perfluorohexanesulfonic acid (PFHxS)	3.9		50.2	61.4		ng/L		115	70 - 130	6	30	
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	60.5		ng/L		120	70 - 130	10	30	
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	57.5		ng/L		113	70 - 130	2	30	
Perfluorononanoic acid (PFNA)	<2.0		50.2	57.4		ng/L		114	70 - 130	5	30	
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	54.8		ng/L		109	70 - 130	3	30	
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	54.1		ng/L		108	70 - 130	7	30	
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	58.9		ng/L		117	70 - 130	7	30	
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	62.1		ng/L		124	70 - 130	6	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	57.6		ng/L		115	70 - 130	3	30	

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	116		70 - 130
13C2 PFDA	115		70 - 130
13C3-GenX	112		70 - 130

QC Association Summary

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

Job ID: 380-138071-1
SDG: Weekly PFAS

LCMS

Prep Batch: 138854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-138071-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-138071-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-138854/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-138854/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-138854/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-138071-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-138071-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	

Analysis Batch: 138985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-138071-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	138854
380-138071-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	138854
MBL 380-138854/20-A	Method Blank	Total/NA	Water	537.1	138854
LCS 380-138854/22-A	Lab Control Sample	Total/NA	Water	537.1	138854
MRL 380-138854/21-A	Lab Control Sample	Total/NA	Water	537.1	138854
380-138071-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	138854
380-138071-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	138854

Prep Batch: 139600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-138071-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-139600/20-A	Method Blank	Total/NA	Water	533	
LCS 380-139600/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-139600/21-A	Lab Control Sample	Total/NA	Water	533	
380-137691-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-137691-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 139601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-138071-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-139601/12-A	Method Blank	Total/NA	Water	533	
LCS 380-139601/14-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-139601/13-A	Lab Control Sample	Total/NA	Water	533	
380-138072-E-1-A MS	Matrix Spike	Total/NA	Water	533	
380-138072-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 139825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-138071-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	139601
MBL 380-139601/12-A	Method Blank	Total/NA	Water	533	139601
LCS 380-139601/14-A	Lab Control Sample	Total/NA	Water	533	139601
MRL 380-139601/13-A	Lab Control Sample	Total/NA	Water	533	139601
380-138072-E-1-A MS	Matrix Spike	Total/NA	Water	533	139601
380-138072-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	139601

Analysis Batch: 139920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-138071-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	139600
MBL 380-139600/20-A	Method Blank	Total/NA	Water	533	139600
LCS 380-139600/22-A	Lab Control Sample	Total/NA	Water	533	139600
MRL 380-139600/21-A	Lab Control Sample	Total/NA	Water	533	139600

QC Association Summary

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

Job ID: 380-138071-1
SDG: Weekly PFAS

LCMS (Continued)

Analysis Batch: 139920 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-137691-B-1-A MS	Matrix Spike	Total/NA	Water	533	139600
380-137691-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	139600

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Lab Chronicle

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

Job ID: 380-138071-1
 SDG: Weekly PFAS

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-138071-1

Date Collected: 02/25/25 10:00

Matrix: Water

Date Received: 02/27/25 10:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			139600	HM3M	EA POM	03/04/25 14:24
Total/NA	Analysis	533		1	139920	SZ9R	EA POM	03/05/25 21:02
Total/NA	Prep	537.1 DW			138854	N8NE	EA POM	02/28/25 15:50
Total/NA	Analysis	537.1		1	138985	Y5FM	EA POM	03/01/25 10:30

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-138071-2

Date Collected: 02/25/25 10:00

Matrix: Water

Date Received: 02/27/25 10:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			139601	HM3M	EA POM	03/04/25 14:26
Total/NA	Analysis	533		1	139825	SZ9R	EA POM	03/05/25 11:57
Total/NA	Prep	537.1 DW			138854	N8NE	EA POM	02/28/25 15:50
Total/NA	Analysis	537.1		1	138985	Y5FM	EA POM	03/01/25 13:33

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: 380-138071-1
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 *

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

Method Summary

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

Job ID: 380-138071-1
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: 380-138071-1
SDG: Weekly PFAS

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
380-138071-1	HALAWA SHAFT VIEWING POOL	Water	02/25/25 10:00	02/27/25 10:03
380-138071-2	FB: HALAWA SHAFT VIEWING POOL	Water	02/25/25 10:00	02/27/25 10:03

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-138071-1

SDG Number: Weekly PFAS

Login Number: 138071

List Source: Eurofins Eaton Analytical Pomona

List Number: 1

Creator: Ngo, Theodore

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

