

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL [PFAS]

JOB NUMBER

380-80992-1

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



Authorized for release by
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Revision 1



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Surrogate Summary	22
Isotope Dilution Summary	23
QC Sample Results	25
QC Association Summary	47
Lab Chronicle	49
Certification Summary	51
Method Summary	52
Sample Summary	53
Chain of Custody	54
Receipt Checklists	57

Definitions/Glossary

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

Job ID: 380-80992-1

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.
α	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 [PFAS]

Job ID: 380-80992-1

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**Job Narrative
380-80992-1**

REVISION

The report being provided is a revision of the original report sent on 2/6/2024. The report (revision 1) is being revised to correct sample date as annotated on the revised COC.

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 1/31/2024 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.4°C, 1.6°C and 3.0°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 [PFAS]

Job ID: 380-80992-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-80992-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-80992-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-80992-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-80992-5

No Detections.

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-80992-6

No Detections.

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-80992-7

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-8

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 [PFAS]

Job ID: 380-80992-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-80992-1

Date Collected: 01/29/24 09:49

Matrix: Water

Date Received: 01/31/24 10:20

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		02/01/24 05:20	02/01/24 15:05	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	83		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C6 PFDA	81		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C5 PFHxA	87		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C4 PFHpA	90		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C8 PFOA	86		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C9 PFNA	83		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C7 PFUnA	84		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C2 PFDoA	84		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C4 PFBA	91		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C5 PFPeA	91		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C3 PFBS	101		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C3 PFHxS	99		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C8 PFOS	98		50 - 200	02/01/24 05:20	02/01/24 15:05	1

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Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-80992-1

Date Collected: 01/29/24 09:49

Matrix: Water

Date Received: 01/31/24 10:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	96		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C2-6:2-FTS	89		50 - 200	02/01/24 05:20	02/01/24 15:05	1
13C2-8:2-FTS	75		50 - 200	02/01/24 05:20	02/01/24 15:05	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		02/01/24 11:38	02/02/24 21:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 21:52	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	113		70 - 130	02/01/24 11:38	02/02/24 21:52	1		
13C2 PFHxA	107		70 - 130	02/01/24 11:38	02/02/24 21:52	1		
13C2 PFDA	104		70 - 130	02/01/24 11:38	02/02/24 21:52	1		
13C3-GenX	104		70 - 130	02/01/24 11:38	02/02/24 21:52	1		

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-80992-2

Date Collected: 01/29/24 10:45

Matrix: Water

Date Received: 01/31/24 10:20

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		02/01/24 05:20	02/01/24 14:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1

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Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-80992-2

Date Collected: 01/29/24 10:45

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:37	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C6 PFDA	84		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C5 PFHxA	94		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C4 PFHpA	98		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C8 PFOA	93		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C9 PFNA	88		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C7 PFUnA	87		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C2 PFDoA	85		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C4 PFBA	96		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C5 PFPeA	94		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C3 PFBS	102		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C3 PFHxS	101		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C8 PFOS	97		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C2-4:2-FTS	92		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C2-6:2-FTS	90		50 - 200	02/01/24 05:20	02/01/24 14:37	1
13C2-8:2-FTS	73		50 - 200	02/01/24 05:20	02/01/24 14:37	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		02/01/24 11:38	02/02/24 22:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-80992-2

Date Collected: 01/29/24 10:45

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 11:38	02/02/24 22:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130			02/01/24 11:38	02/02/24 22:02	1
13C2 PFHxA	107		70 - 130			02/01/24 11:38	02/02/24 22:02	1
13C2 PFDA	105		70 - 130			02/01/24 11:38	02/02/24 22:02	1
13C3-GenX	106		70 - 130			02/01/24 11:38	02/02/24 22:02	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-80992-3

Date Collected: 01/29/24 11:13

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-80992-3

Date Collected: 01/29/24 11:13

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:15	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C6 PFDA	83		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C5 PFHxA	90		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C4 PFHpA	98		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C8 PFOA	93		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C9 PFNA	83		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C7 PFUnA	87		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C2 PFDoA	82		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C4 PFBA	96		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C5 PFPeA	94		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C3 PFBS	103		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C3 PFHxS	103		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C8 PFOS	98		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C2-4:2-FTS	95		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C2-6:2-FTS	99		50 - 200	02/01/24 05:20	02/01/24 15:15	1
13C2-8:2-FTS	77		50 - 200	02/01/24 05:20	02/01/24 15:15	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		02/01/24 10:26	02/02/24 17:51	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-80992-3

Date Collected: 01/29/24 11:13

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 17:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEFOSAA	111		70 - 130			02/01/24 10:26	02/02/24 17:51	1
13C2 PFHxA	107		70 - 130			02/01/24 10:26	02/02/24 17:51	1
13C2 PFDA	104		70 - 130			02/01/24 10:26	02/02/24 17:51	1
13C3-GenX	94		70 - 130			02/01/24 10:26	02/02/24 17:51	1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-4

Date Collected: 01/29/24 10:21

Matrix: Water

Date Received: 01/31/24 10:20

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		02/01/24 05:20	02/01/24 15:24	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-4

Date Collected: 01/29/24 10:21

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluoropentanoic acid (PFPeA)	2.5		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:24	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C6 PFDA	78		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C5 PFHxA	85		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C4 PFHpA	90		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C8 PFOA	87		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C9 PFNA	81		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C7 PFUnA	79		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C2 PFDoA	82		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C4 PFBA	88		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C5 PFPeA	93		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C3 PFBS	96		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C3 PFHxS	95		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C8 PFOS	94		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C2-4:2-FTS	94		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C2-6:2-FTS	88		50 - 200			02/01/24 05:20	02/01/24 15:24	1
13C2-8:2-FTS	73		50 - 200			02/01/24 05:20	02/01/24 15:24	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		02/01/24 10:26	02/02/24 18:01	1
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
N-ethylperfluorooctanesulfonamide cetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-4

Date Collected: 01/29/24 10:21

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130			02/01/24 10:26	02/02/24 18:01	1
13C2 PFHxA	109		70 - 130			02/01/24 10:26	02/02/24 18:01	1
13C2 PFDA	102		70 - 130			02/01/24 10:26	02/02/24 18:01	1
13C3-GenX	93		70 - 130			02/01/24 10:26	02/02/24 18:01	1

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-80992-5

Date Collected: 01/29/24 09:49

Matrix: Water

Date Received: 01/31/24 10:20

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		02/01/24 05:20	02/01/24 15:34	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-80992-5

Date Collected: 01/29/24 09:49

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:34	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C6 PFDA	86		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C5 PFHxA	100		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C4 PFHpA	98		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C8 PFOA	95		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C9 PFNA	92		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C7 PFUnA	91		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C2 PFDoA	88		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C4 PFBA	102		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C5 PFPeA	97		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C3 PFBS	98		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C3 PFHxS	99		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C8 PFOS	95		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C2-4:2-FTS	93		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C2-6:2-FTS	89		50 - 200			02/01/24 05:20	02/01/24 15:34	1
13C2-8:2-FTS	76		50 - 200			02/01/24 05:20	02/01/24 15:34	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		02/01/24 10:26	02/02/24 18:10	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			02/01/24 10:26	02/02/24 18:10	1
13C2 PFHxA	104		70 - 130			02/01/24 10:26	02/02/24 18:10	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-80992-5

Date Collected: 01/29/24 09:49

Matrix: Water

Date Received: 01/31/24 10:20

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	107		70 - 130	02/01/24 10:26	02/02/24 18:10	1
13C3-GenX	94		70 - 130	02/01/24 10:26	02/02/24 18:10	1

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-80992-6

Date Collected: 01/29/24 10:45

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/01/24 05:20	02/01/24 15:43	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
13C3 HFPO-DA	101		50 - 200	02/01/24 05:20	02/01/24 15:43	1		
13C6 PFDA	90		50 - 200	02/01/24 05:20	02/01/24 15:43	1		
13C5 PFHxA	101		50 - 200	02/01/24 05:20	02/01/24 15:43	1		
13C4 PFHpA	103		50 - 200	02/01/24 05:20	02/01/24 15:43	1		

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-80992-6

Date Collected: 01/29/24 10:45

Matrix: Water

Date Received: 01/31/24 10:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	100		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C9 PFNA	93		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C7 PFUnA	94		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C2 PFDoA	92		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C4 PFBA	102		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C5 PFPeA	100		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C3 PFBS	100		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C3 PFHxS	99		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C8 PFOS	98		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C2-4:2-FTS	87		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C2-6:2-FTS	89		50 - 200	02/01/24 05:20	02/01/24 15:43	1
13C2-8:2-FTS	72		50 - 200	02/01/24 05:20	02/01/24 15:43	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		02/01/24 10:26	02/02/24 18:20	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
N-ethylperfluorooctanesulfonamide cetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	110		70 - 130	02/01/24 10:26	02/02/24 18:20	1
13C2 PFHxA	109		70 - 130	02/01/24 10:26	02/02/24 18:20	1
13C2 PFDA	103		70 - 130	02/01/24 10:26	02/02/24 18:20	1
13C3-GenX	100		70 - 130	02/01/24 10:26	02/02/24 18:20	1

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-80992-7

Date Collected: 01/29/24 11:13

Matrix: Water

Date Received: 01/31/24 10:20

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		02/01/24 15:50	02/02/24 20:28	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C6 PFDA	87		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C5 PFHxA	90		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C4 PFHpA	96		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C8 PFOA	95		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C9 PFNA	89		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C7 PFUnA	90		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C2 PFDoA	95		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C4 PFBA	98		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C5 PFPeA	92		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C3 PFBS	106		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C3 PFHxS	103		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C8 PFOS	97		50 - 200	02/01/24 15:50	02/02/24 20:28	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-80992-7

Date Collected: 01/29/24 11:13

Matrix: Water

Date Received: 01/31/24 10:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	118		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C2-6:2-FTS	122		50 - 200	02/01/24 15:50	02/02/24 20:28	1
13C2-8:2-FTS	104		50 - 200	02/01/24 15:50	02/02/24 20:28	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		02/01/24 10:26	02/02/24 18:30	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:30	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	110		70 - 130	02/01/24 10:26	02/02/24 18:30	1		
13C2 PFHxA	106		70 - 130	02/01/24 10:26	02/02/24 18:30	1		
13C2 PFDA	104		70 - 130	02/01/24 10:26	02/02/24 18:30	1		
13C3-GenX	97		70 - 130	02/01/24 10:26	02/02/24 18:30	1		

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-8

Date Collected: 01/29/24 10:21

Matrix: Water

Date Received: 01/31/24 10:20

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		02/01/24 15:50	02/02/24 20:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-8

Date Collected: 01/29/24 10:21

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/01/24 15:50	02/02/24 20:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C6 PFDA	84		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C5 PFHxA	91		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C4 PFHpA	100		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C8 PFOA	95		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C9 PFNA	91		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C7 PFUnA	88		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C2 PFDoA	90		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C4 PFBA	99		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C5 PFPeA	96		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C3 PFBS	103		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C3 PFHxS	106		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C8 PFOS	100		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C2-4:2-FTS	123		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C2-6:2-FTS	119		50 - 200	02/01/24 15:50	02/02/24 20:38	1
13C2-8:2-FTS	101		50 - 200	02/01/24 15:50	02/02/24 20:38	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		02/01/24 10:26	02/02/24 18:40	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-80992-1

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-8

Date Collected: 01/29/24 10:21

Matrix: Water

Date Received: 01/31/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/01/24 10:26	02/02/24 18:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	116		70 - 130			02/01/24 10:26	02/02/24 18:40	1
13C2 PFHxA	112		70 - 130			02/01/24 10:26	02/02/24 18:40	1
13C2 PFDA	106		70 - 130			02/01/24 10:26	02/02/24 18:40	1
13C3-GenX	100		70 - 130			02/01/24 10:26	02/02/24 18:40	1

Surrogate Summary

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

Job ID: 380-80992-1

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	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-80722-U-1-A MS	Matrix Spike	110	109	105	107
380-80722-V-1-B MS	Matrix Spike	124	120	121	117
380-80992-1	MOANALUA WELLS	113	107	104	104
380-80992-2	AIEA GULCH WELLS PUMP 2	113	107	105	106
380-80992-3	AIEA WELLS PUMPS 1&2 (260) P2	111	107	104	94
380-80992-4	HALAWA WELLS UNITS 1&2 P1	106	109	102	93
380-80992-5	FB: MOANALUA WELLS	109	104	107	94
380-80992-6	FB: AIEA GULCH WELLS PUMF 2	110	109	103	100
380-80992-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	110	106	104	97
380-80992-8	FB: HALAWA WELLS UNITS 1&2 P1	116	112	106	100
380-80998-A-1-B MS	Matrix Spike	101	109	97	95
380-80998-A-1-C MSD	Matrix Spike Duplicate	101	105	96	93
LCS 380-74397/23-A	Lab Control Sample	97	103	93	96
LCS 380-74403/23-A	Lab Control Sample	110	104	104	105
MBL 380-74397/21-A	Method Blank	93	84	86	77
MBL 380-74403/21-A	Method Blank	107	101	104	100
MRL 380-74397/22-A	Lab Control Sample	97	91	89	85
MRL 380-74403/22-A	Lab Control Sample	104	104	102	106

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 [PFAS]

Job ID: 380-80992-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-80992-1	MOANALUA WELLS	83	81	87	90	86	83	84	84
380-80992-2	AIEA GULCH WELLS PUMP 2	92	84	94	98	93	88	87	85
380-80992-2 MS	AIEA GULCH WELLS PUMP 2	88	86	93	94	95	89	94	97
380-80992-2 MSD	AIEA GULCH WELLS PUMP 2	95	92	96	99	96	94	95	93
380-80992-3	AIEA WELLS PUMPS 1&2 (260) P2	87	83	90	98	93	83	87	82
380-80992-4	HALAWA WELLS UNITS 1&2 P1	82	78	85	90	87	81	79	82
380-80992-5	FB: MOANALUA WELLS	96	86	100	98	95	92	91	88
380-80992-6	FB: AIEA GULCH WELLS PUMF 2	101	90	101	103	100	93	94	92
380-80992-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	87	87	90	96	95	89	90	95
380-80992-8	FB: HALAWA WELLS UNITS 1&2 P1	85	84	91	100	95	91	88	90
380-80996-E-1-A LMS	Matrix Spike	93	90	94	100	98	90	93	95
380-80996-F-1-A LMSD	Matrix Spike Duplicate	95	89	93	103	97	90	95	95
LCS 380-74350/23-A	Lab Control Sample	104	95	98	101	100	95	98	94
LCS 380-74430/23-A	Lab Control Sample	88	93	88	98	96	91	93	89
MBL 380-74350/21-A	Method Blank	94	81	97	102	96	88	84	84
MBL 380-74430/21-A	Method Blank	85	91	95	102	99	94	95	92
MRL 380-74350/22-A	Lab Control Sample	91	82	92	97	92	86	86	87
MRL 380-74430/22-A	Lab Control Sample	88	90	98	104	99	93	93	96

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-80992-1	MOANALUA WELLS	91	91	101	99	98	96	89	75
380-80992-2	AIEA GULCH WELLS PUMP 2	96	94	102	101	97	92	90	73
380-80992-2 MS	AIEA GULCH WELLS PUMP 2	92	88	95	96	95	87	78	73
380-80992-2 MSD	AIEA GULCH WELLS PUMP 2	99	100	102	102	99	92	85	78
380-80992-3	AIEA WELLS PUMPS 1&2 (260) P2	96	94	103	103	98	95	99	77
380-80992-4	HALAWA WELLS UNITS 1&2 P1	88	93	96	95	94	94	88	73
380-80992-5	FB: MOANALUA WELLS	102	97	98	99	95	93	89	76
380-80992-6	FB: AIEA GULCH WELLS PUMF 2	102	100	100	99	98	87	89	72
380-80992-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	98	92	106	103	97	118	122	104
380-80992-8	FB: HALAWA WELLS UNITS 1&2 P1	99	96	103	106	100	123	119	101
380-80996-E-1-A LMS	Matrix Spike	97	101	108	103	97	127	123	101
380-80996-F-1-A LMSD	Matrix Spike Duplicate	99	104	102	103	96	123	123	104
LCS 380-74350/23-A	Lab Control Sample	103	102	105	105	101	89	88	77
LCS 380-74430/23-A	Lab Control Sample	96	93	102	107	100	112	112	105
MBL 380-74350/21-A	Method Blank	96	91	102	101	96	89	86	72
MBL 380-74430/21-A	Method Blank	99	97	106	102	98	117	116	98
MRL 380-74350/22-A	Lab Control Sample	92	90	96	97	91	82	78	64
MRL 380-74430/22-A	Lab Control Sample	104	98	115	110	101	120	126	103

Surrogate Legend

HFPODA = 13C3 HFPO-DA

Isotope Dilution Summary

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

Job ID: 380-80992-1

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

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QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MBL 380-74350/21-A
Matrix: Water
Analysis Batch: 74433

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74350

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		02/01/24 05:20	02/01/24 14:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		02/01/24 05:20	02/01/24 14:08	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C6 PFDA	81		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C5 PFHxA	97		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C4 PFHpA	102		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C8 PFOA	96		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C9 PFNA	88		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C7 PFUnA	84		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C2 PFDoA	84		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C4 PFBA	96		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C5 PFPeA	91		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C3 PFBS	102		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C3 PFHxS	101		50 - 200	02/01/24 05:20	02/01/24 14:08	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MBL 380-74350/21-A
Matrix: Water
Analysis Batch: 74433

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74350

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	96		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C2-4:2-FTS	89		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C2-6:2-FTS	86		50 - 200	02/01/24 05:20	02/01/24 14:08	1
13C2-8:2-FTS	72		50 - 200	02/01/24 05:20	02/01/24 14:08	1

Lab Sample ID: LCS 380-74350/23-A
Matrix: Water
Analysis Batch: 74433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74350

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	58.3		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	54.7		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	61.0		ng/L		101	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	52.2		ng/L		87	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	57.6		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	58.2		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	60.7		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	62.1		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	58.6		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	61.0		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	60.1	60.7		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	59.7		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	61.4		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	56.9		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	58.8		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	60.9		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	60.0		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	59.0		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	60.5		ng/L		101	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	52.9		ng/L		88	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	59.6		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	61.3		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	62.3		ng/L		104	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	61.2		ng/L		102	70 - 130

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QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: LCS 380-74350/23-A
Matrix: Water
Analysis Batch: 74433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74350

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.1	56.8		ng/L		95	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	104		50 - 200				
13C6 PFDA	95		50 - 200				
13C5 PFHxA	98		50 - 200				
13C4 PFHpA	101		50 - 200				
13C8 PFOA	100		50 - 200				
13C9 PFNA	95		50 - 200				
13C7 PFUnA	98		50 - 200				
13C2 PFDoA	94		50 - 200				
13C4 PFBA	103		50 - 200				
13C5 PFPeA	102		50 - 200				
13C3 PFBS	105		50 - 200				
13C3 PFHxS	105		50 - 200				
13C8 PFOS	101		50 - 200				
13C2-4:2-FTS	89		50 - 200				
13C2-6:2-FTS	88		50 - 200				
13C2-8:2-FTS	77		50 - 200				

Lab Sample ID: MRL 380-74350/22-A
Matrix: Water
Analysis Batch: 74433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74350

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.59	J	ng/L		80	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.50	J	ng/L		75	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.65	J	ng/L		82	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.61	J	ng/L		80	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.74	J	ng/L		87	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.72	J	ng/L		86	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.65	J	ng/L		82	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.76	J	ng/L		88	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.68	J	ng/L		84	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.75	J	ng/L		87	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.78	J	ng/L		89	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.80	J	ng/L		90	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.89	J	ng/L		94	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.61	J	ng/L		80	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.77	J	ng/L		88	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MRL 380-74350/22-A
Matrix: Water
Analysis Batch: 74433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74350

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	1.90	J	ng/L		95	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	1.82	J	ng/L		91	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	1.87	J	ng/L		93	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.97	J	ng/L		98	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.44	J	ng/L		72	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.72	J	ng/L		86	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.69	J	ng/L		84	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.89	J	ng/L		94	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.76	J	ng/L		88	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.58	J	ng/L		79	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	82		50 - 200
13C5 PFHxA	92		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	86		50 - 200
13C7 PFUnA	86		50 - 200
13C2 PFDoA	87		50 - 200
13C4 PFBA	92		50 - 200
13C5 PFPeA	90		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	97		50 - 200
13C8 PFOS	91		50 - 200
13C2-4:2-FTS	82		50 - 200
13C2-6:2-FTS	78		50 - 200
13C2-8:2-FTS	64		50 - 200

Lab Sample ID: 380-80992-2 MS
Matrix: Water
Analysis Batch: 74433

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 74350

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	58.8		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	55.6		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	60.7		ng/L		101	70 - 130

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: 380-80992-2 MS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 74433

Prep Batch: 74350

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.4	61.2		ng/L		101	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	58.8		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	63.0		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	60.5		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	62.5		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	58.6		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	61.8		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	61.8		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	57.7		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	61.0		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	58.8		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	58.8		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	57.5		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	60.4		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	59.2		ng/L		98	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		60.4	58.1		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	55.9		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	60.5		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	63.1		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	65.1		ng/L		107	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	58.9		ng/L		98	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	58.9		ng/L		98	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	88		50 - 200
13C6 PFDA	86		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	94		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	89		50 - 200
13C7 PFUnA	94		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	92		50 - 200
13C5 PFPeA	88		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	96		50 - 200
13C8 PFOS	95		50 - 200

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: 380-80992-2 MS
Matrix: Water
Analysis Batch: 74433

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 74350

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	87		50 - 200
13C2-6:2-FTS	78		50 - 200
13C2-8:2-FTS	73		50 - 200

Lab Sample ID: 380-80992-2 MSD
Matrix: Water
Analysis Batch: 74433

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 74350

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		60.4	58.1		ng/L		96	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	56.7		ng/L		94	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	60.8		ng/L		101	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	60.1		ng/L		100	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	60.1		ng/L		100	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		60.4	59.0		ng/L		98	70 - 130	7	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	59.4		ng/L		98	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	63.3		ng/L		105	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	58.6		ng/L		96	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	61.1		ng/L		100	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.4	61.8		ng/L		102	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	60.5		ng/L		100	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	<2.0		60.4	64.0		ng/L		106	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	57.8		ng/L		96	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		60.4	61.1		ng/L		101	70 - 130	4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	60.8		ng/L		101	70 - 130	6	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	62.6		ng/L		104	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	59.4		ng/L		98	70 - 130	0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	57.9		ng/L		96	70 - 130	0	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	55.7		ng/L		92	70 - 130	0	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	63.0		ng/L		104	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	64.0		ng/L		105	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	61.0		ng/L		101	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	59.0		ng/L		98	70 - 130	0	30

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QC Sample Results

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

Job ID: 380-80992-1

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	92		50 - 200
13C5 PFHxA	96		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	96		50 - 200
13C9 PFNA	94		50 - 200
13C7 PFUnA	95		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	100		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	102		50 - 200
13C8 PFOS	99		50 - 200
13C2-4:2-FTS	92		50 - 200
13C2-6:2-FTS	85		50 - 200
13C2-8:2-FTS	78		50 - 200

Lab Sample ID: MBL 380-74430/21-A
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74430

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		02/01/24 15:50	02/02/24 19:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1

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QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MBL 380-74430/21-A
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74430

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		02/01/24 15:50	02/02/24 19:02	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C6 PFDA	91		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C5 PFHxA	95		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C4 PFHpA	102		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C8 PFOA	99		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C9 PFNA	94		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C7 PFUnA	95		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C2 PFDoA	92		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C4 PFBA	99		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C5 PFPeA	97		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C3 PFBS	106		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C3 PFHxS	102		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C8 PFOS	98		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C2-4:2-FTS	117		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C2-6:2-FTS	116		50 - 200	02/01/24 15:50	02/02/24 19:02	1
13C2-8:2-FTS	98		50 - 200	02/01/24 15:50	02/02/24 19:02	1

Lab Sample ID: LCS 380-74430/23-A
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74430

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	56.8		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	55.5		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	56.2		ng/L		93	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	61.7		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	59.1		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	58.0		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	62.1		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	60.0		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	58.7		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	59.5		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	60.2	59.1		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	57.9		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	55.6		ng/L		92	70 - 130

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QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: LCS 380-74430/23-A
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74430

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	60.2	58.2		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	60.5		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	56.7		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	62.5		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	61.5		ng/L		102	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	67.9		ng/L		113	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.2	54.8		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	57.3		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	58.8		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	63.3		ng/L		105	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	61.9		ng/L		103	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.2	57.7		ng/L		96	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	88		50 - 200
13C6 PFDA	93		50 - 200
13C5 PFHxA	88		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	96		50 - 200
13C9 PFNA	91		50 - 200
13C7 PFUnA	93		50 - 200
13C2 PFDoA	89		50 - 200
13C4 PFBA	96		50 - 200
13C5 PFPeA	93		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	100		50 - 200
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: MRL 380-74430/22-A
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74430

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.84	J	ng/L		92	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.85	J	ng/L		92	50 - 150

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QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MRL 380-74430/22-A
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74430

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.98	J	ng/L		98	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.96	J	ng/L		97	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	1.89	J	ng/L		94	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.10	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.04	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.04	J	ng/L		102	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	2.16	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.12	J	ng/L		106	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.69	J	ng/L		84	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.23	J	ng/L		111	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.90	J	ng/L		94	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	88		50 - 200
13C6 PFDA	90		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	93		50 - 200
13C7 PFUnA	93		50 - 200
13C2 PFDoA	96		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	98		50 - 200
13C3 PFBS	115		50 - 200
13C3 PFHxS	110		50 - 200

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MRL 380-74430/22-A
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74430

<i>Isotope Dilution</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	120		50 - 200
13C2-6:2-FTS	126		50 - 200
13C2-8:2-FTS	103		50 - 200

Lab Sample ID: 380-80996-E-1-A LMS
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74430

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>LMS Result</i>	<i>LMS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	1.99	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.00		ng/L		99	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.13		ng/L		106	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.28		ng/L		113	50 - 150
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	3.47		ng/L		100	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.20		ng/L		109	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.08		ng/L		103	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	3.27		ng/L		113	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.01	4.60		ng/L		117	50 - 150
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.80		ng/L		99	50 - 150
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.32		ng/L		115	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.4		2.01	4.61		ng/L		109	50 - 150
Perfluorooctanoic acid (PFOA)	<2.0		2.01	3.90		ng/L		101	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.11		ng/L		105	50 - 150
Perfluorobutanoic acid (PFBA)	<2.0		2.01	2.94		ng/L		146	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.37		ng/L		118	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.49		ng/L		124	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.01	2.37		ng/L		118	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	2.37		ng/L		118	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.01	1.83	J	ng/L		91	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	2.34		ng/L		116	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	2.36		ng/L		117	50 - 150
Perfluoropentanoic acid (PFPeA)	<2.0		2.01	4.30		ng/L		120	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	2.39		ng/L		119	50 - 150

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: 380-80996-E-1-A LMS
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74430

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	2.54		ng/L		126	50 - 150
LMS LMS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	93		50 - 200						
13C6 PFDA	90		50 - 200						
13C5 PFHxA	94		50 - 200						
13C4 PFHpA	100		50 - 200						
13C8 PFOA	98		50 - 200						
13C9 PFNA	90		50 - 200						
13C7 PFUnA	93		50 - 200						
13C2 PFDoA	95		50 - 200						
13C4 PFBA	97		50 - 200						
13C5 PFPeA	101		50 - 200						
13C3 PFBS	108		50 - 200						
13C3 PFHxS	103		50 - 200						
13C8 PFOS	97		50 - 200						
13C2-4:2-FTS	127		50 - 200						
13C2-6:2-FTS	123		50 - 200						
13C2-8:2-FTS	101		50 - 200						

Lab Sample ID: 380-80996-F-1-A LMSD
Matrix: Water
Analysis Batch: 74573

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 74430

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.00	2.05		ng/L		102	50 - 150	3	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.00	2.03		ng/L		101	50 - 150	2	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.00	2.12		ng/L		106	50 - 150	0	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.00	2.04		ng/L		102	50 - 150	11	50
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.00	3.76		ng/L		115	50 - 150	8	50
Perfluorodecanoic acid (PFDA)	<2.0		2.00	2.25		ng/L		113	50 - 150	3	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.00	2.05		ng/L		102	50 - 150	2	50
Perfluoroheptanoic acid (PFHpA)	<2.0		2.00	3.16		ng/L		109	50 - 150	3	50
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.00	4.58		ng/L		116	50 - 150	1	50
Perfluorohexanoic acid (PFHxA)	<2.0		2.00	3.92		ng/L		105	50 - 150	3	50
Perfluorononanoic acid (PFNA)	<2.0		2.00	2.34		ng/L		117	50 - 150	1	50
Perfluorooctanesulfonic acid (PFOS)	2.4		2.00	4.76		ng/L		117	50 - 150	3	50
Perfluorooctanoic acid (PFOA)	<2.0		2.00	4.00		ng/L		106	50 - 150	2	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.00	2.18		ng/L		109	50 - 150	3	50
Perfluorobutanoic acid (PFBA)	<2.0		2.00	2.87		ng/L		143	50 - 150	2	50

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QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: 380-80996-F-1-A LMSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 74573

Prep Batch: 74430

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.00	2.26		ng/L		113	50 - 150	5	50
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.00	2.41		ng/L		120	50 - 150	3	50
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.00	2.31		ng/L		115	50 - 150	3	50
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.00	2.78		ng/L		139	50 - 150	16	50
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.00	1.93	J	ng/L		96	50 - 150	5	50
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.00	2.29		ng/L		114	50 - 150	2	50
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.00	2.33		ng/L		116	50 - 150	1	50
Perfluoropentanoic acid (PFPeA)	<2.0		2.00	4.32		ng/L		121	50 - 150	1	50
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.00	2.38		ng/L		119	50 - 150	1	50
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.00	2.53		ng/L		126	50 - 150	1	50

Isotope Dilution	LMSD %Recovery	LMSD Qualifier	Limits
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	89		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	103		50 - 200
13C8 PFOA	97		50 - 200
13C9 PFNA	90		50 - 200
13C7 PFUnA	95		50 - 200
13C2 PFDoA	95		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	96		50 - 200
13C2-4:2-FTS	123		50 - 200
13C2-6:2-FTS	123		50 - 200
13C2-8:2-FTS	104		50 - 200

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

Lab Sample ID: MBL 380-74397/21-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 74621

Prep Batch: 74397

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		02/01/24 10:26	02/02/24 16:51	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<0.58		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1

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QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MBL 380-74397/21-A
Matrix: Water
Analysis Batch: 74621

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74397

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		02/01/24 10:26	02/02/24 16:51	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	93		70 - 130			02/01/24 10:26	02/02/24 16:51	1
13C2 PFHxA	84		70 - 130			02/01/24 10:26	02/02/24 16:51	1
13C2 PFDA	86		70 - 130			02/01/24 10:26	02/02/24 16:51	1
13C3-GenX	77		70 - 130			02/01/24 10:26	02/02/24 16:51	1

Lab Sample ID: LCS 380-74397/23-A
Matrix: Water
Analysis Batch: 74621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74397

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonic acid (PFOS)	50.1	54.0		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	48.6		ng/L		97	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	53.2		ng/L		106	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	50.3		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	52.6		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	44.7		ng/L		89	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	53.1		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	50.5		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.1	57.9		ng/L		116	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	50.7		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	58.5		ng/L		117	70 - 130
Perfluorononanoic acid (PFNA)	50.1	50.0		ng/L		100	70 - 130

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QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: LCS 380-74397/23-A
Matrix: Water
Analysis Batch: 74621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74397

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	50.1	45.9		ng/L		92	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	48.8		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	50.1	52.9		ng/L		106	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	55.1		ng/L		110	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	53.6		ng/L		107	70 - 130
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
d5-NEtFOSAA	97		70 - 130				
13C2 PFHxA	103		70 - 130				
13C2 PFDA	93		70 - 130				
13C3-GenX	96		70 - 130				

Lab Sample ID: MRL 380-74397/22-A
Matrix: Water
Analysis Batch: 74621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74397

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.94	J	ng/L		96	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.23	J	ng/L		111	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.09	J	ng/L		104	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.23	J	ng/L		111	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.22	J	ng/L		110	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.18	J	ng/L		108	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.04	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.26	J	ng/L		113	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.34	J	ng/L		116	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.16	J	ng/L		108	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.37	J	ng/L		118	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	1.89	J	ng/L		94	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.05	J	ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.14	J	ng/L		107	50 - 150

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MRL 380-74397/22-A
Matrix: Water
Analysis Batch: 74621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74397

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.22	J	ng/L		110	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.17	J	ng/L		108	50 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
d5-NEtFOSAA	97		70 - 130				
13C2 PFHxA	91		70 - 130				
13C2 PFDA	89		70 - 130				
13C3-GenX	85		70 - 130				

Lab Sample ID: 380-80998-A-1-B MS
Matrix: Water
Analysis Batch: 74621

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74397

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		25.2	24.3		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	28.0		ng/L		109	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	27.1		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	27.5		ng/L		109	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	27.6		ng/L		109	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	29.7		ng/L		116	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	26.1		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.2	30.1		ng/L		116	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.2	27.4		ng/L		109	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	28.6		ng/L		112	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	28.8		ng/L		114	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	30.1		ng/L		118	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.2	27.9		ng/L		111	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	24.2		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	26.6		ng/L		106	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	27.7		ng/L		110	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	27.9		ng/L		111	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	28.2		ng/L		112	70 - 130

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: 380-80998-A-1-B MS
Matrix: Water
Analysis Batch: 74621

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74397

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>d5-NEtFOSAA</i>	101		70 - 130
<i>13C2 PFHxA</i>	109		70 - 130
<i>13C2 PFDA</i>	97		70 - 130
<i>13C3-GenX</i>	95		70 - 130

Lab Sample ID: 380-80998-A-1-C MSD
Matrix: Water
Analysis Batch: 74621

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 74397

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	24.4		ng/L		97	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	28.2		ng/L		110	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	26.8		ng/L		107	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	28.8		ng/L		114	70 - 130	5	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	27.3		ng/L		108	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	28.3		ng/L		110	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	26.1		ng/L		103	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		25.2	29.3		ng/L		113	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		25.2	27.3		ng/L		108	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	29.5		ng/L		115	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	29.2		ng/L		116	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	29.8		ng/L		116	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		25.2	27.5		ng/L		109	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	24.5		ng/L		97	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	25.5		ng/L		101	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	28.1		ng/L		112	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	27.9		ng/L		111	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	27.9		ng/L		111	70 - 130	1	30

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>d5-NEtFOSAA</i>	101		70 - 130
<i>13C2 PFHxA</i>	105		70 - 130
<i>13C2 PFDA</i>	96		70 - 130
<i>13C3-GenX</i>	93		70 - 130

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MBL 380-74403/21-A
Matrix: Water
Analysis Batch: 74618

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74403

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		02/01/24 11:38	02/02/24 18:06	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		02/01/24 11:38	02/02/24 18:06	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130	02/01/24 11:38	02/02/24 18:06	1
13C2 PFHxA	101		70 - 130	02/01/24 11:38	02/02/24 18:06	1
13C2 PFDA	104		70 - 130	02/01/24 11:38	02/02/24 18:06	1
13C3-GenX	100		70 - 130	02/01/24 11:38	02/02/24 18:06	1

Lab Sample ID: LCS 380-74403/23-A
Matrix: Water
Analysis Batch: 74618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74403

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.2	27.3		ng/L		109	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.2	26.3		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.2	26.1		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.2	27.1		ng/L		108	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.2	27.0		ng/L		107	70 - 130
Perfluorohexanoic acid (PFHxA)	25.2	26.8		ng/L		107	70 - 130
Perfluorododecanoic acid (PFDoA)	25.2	24.6		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	25.2	29.2		ng/L		116	70 - 130
Perfluorodecanoic acid (PFDA)	25.2	26.6		ng/L		106	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: LCS 380-74403/23-A
Matrix: Water
Analysis Batch: 74618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74403

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	25.2	27.0		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.2	23.2		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.2	27.7		ng/L		110	70 - 130
Perfluorononanoic acid (PFNA)	25.2	27.6		ng/L		110	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.2	25.7		ng/L		102	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.2	24.1		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.2	26.8		ng/L		106	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.2	22.9		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.2	26.1		ng/L		104	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	110		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	104		70 - 130
13C3-GenX	105		70 - 130

Lab Sample ID: MRL 380-74403/22-A
Matrix: Water
Analysis Batch: 74618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74403

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.54	J	ng/L		127	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.48	J	ng/L		124	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.45	J	ng/L		122	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.41	J	ng/L		120	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.52	J	ng/L		126	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.55	J	ng/L		127	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.37	J	ng/L		118	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.51	J	ng/L		125	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.50	J	ng/L		125	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.45	J	ng/L		122	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.19	J	ng/L		109	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.53	J	ng/L		126	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.50	J	ng/L		125	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.99	J	ng/L		149	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: MRL 380-74403/22-A
Matrix: Water
Analysis Batch: 74618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74403

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.37	J	ng/L		118	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.40	J	ng/L		120	50 - 150
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.10	J	ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.35	J	ng/L		117	50 - 150
Surrogate							
		MRL %Recovery	MRL Qualifier				Limits
d5-NEtFOSAA		104					70 - 130
13C2 PFHxA		104					70 - 130
13C2 PFDA		102					70 - 130
13C3-GenX		106					70 - 130

Lab Sample ID: 380-80722-U-1-A MS
Matrix: Water
Analysis Batch: 74618

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74403

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	55.9		ng/L		111	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	51.5		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	53.3		ng/L		106	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	52.0		ng/L		104	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	54.4		ng/L		108	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	53.0		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	50.7		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	55.4		ng/L		110	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	51.5		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	52.7		ng/L		105	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	50.8		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	53.4		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	53.2		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	50.2		ng/L		100	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		50.2	50.4		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	53.3		ng/L		106	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	44.4		ng/L		89	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: 380-80722-U-1-A MS
Matrix: Water
Analysis Batch: 74618

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74403

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	49.5		ng/L		99	70 - 130
Surrogate									
	MS MS								
	%Recovery	Qualifier	Limits						
d5-NEtFOSAA	110		70 - 130						
13C2 PFHxA	109		70 - 130						
13C2 PFDA	105		70 - 130						
13C3-GenX	107		70 - 130						

Lab Sample ID: 380-80722-V-1-B MS
Matrix: Water
Analysis Batch: 74618

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74403

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		25.1	26.1		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	27.1		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.7		ng/L		106	70 - 130
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		25.1	26.8		ng/L		107	70 - 130
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		25.1	26.5		ng/L		105	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.2		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	25.5		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	29.6		ng/L		118	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.7		ng/L		110	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	28.0		ng/L		112	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	26.4		ng/L		105	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	27.5		ng/L		109	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	27.9		ng/L		111	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	25.8		ng/L		103	70 - 130
Perfluorotridecanoic acid (PFTDA)	<2.0		25.1	25.4		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	28.6		ng/L		114	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	24.1		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	26.3		ng/L		105	70 - 130
Surrogate									
	MS MS								
	%Recovery	Qualifier	Limits						
d5-NEtFOSAA	124		70 - 130						
13C2 PFHxA	120		70 - 130						
13C2 PFDA	121		70 - 130						

QC Sample Results

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

Job ID: 380-80992-1

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

Lab Sample ID: 380-80722-V-1-B MS
Matrix: Water
Analysis Batch: 74618

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74403

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C3-GenX	117		70 - 130

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QC Association Summary

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

Job ID: 380-80992-1

LCMS

Prep Batch: 74350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-80992-1	MOANALUA WELLS	Total/NA	Water	533	
380-80992-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-80992-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-80992-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	
380-80992-5	FB: MOANALUA WELLS	Total/NA	Water	533	
380-80992-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
MBL 380-74350/21-A	Method Blank	Total/NA	Water	533	
LCS 380-74350/23-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-74350/22-A	Lab Control Sample	Total/NA	Water	533	
380-80992-2 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-80992-2 MSD	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	

Prep Batch: 74397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-80992-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-80992-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1 DW	
380-80992-5	FB: MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-80992-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-80992-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-80992-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1 DW	
MBL 380-74397/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-74397/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-74397/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-80998-A-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-80998-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 74403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-80992-1	MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-80992-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
MBL 380-74403/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-74403/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-74403/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-80722-U-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-80722-V-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	

Prep Batch: 74430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-80992-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-80992-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	
MBL 380-74430/21-A	Method Blank	Total/NA	Water	533	
LCS 380-74430/23-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-74430/22-A	Lab Control Sample	Total/NA	Water	533	
380-80996-E-1-A LMS	Matrix Spike	Total/NA	Water	533	
380-80996-F-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 74433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-80992-1	MOANALUA WELLS	Total/NA	Water	533	74350
380-80992-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	74350
380-80992-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	74350

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QC Association Summary

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

Job ID: 380-80992-1

LCMS (Continued)

Analysis Batch: 74433 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-80992-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	74350
380-80992-5	FB: MOANALUA WELLS	Total/NA	Water	533	74350
380-80992-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	74350
MBL 380-74350/21-A	Method Blank	Total/NA	Water	533	74350
LCS 380-74350/23-A	Lab Control Sample	Total/NA	Water	533	74350
MRL 380-74350/22-A	Lab Control Sample	Total/NA	Water	533	74350
380-80992-2 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	74350
380-80992-2 MSD	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	74350

Analysis Batch: 74573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-80992-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	74430
380-80992-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	74430
MBL 380-74430/21-A	Method Blank	Total/NA	Water	533	74430
LCS 380-74430/23-A	Lab Control Sample	Total/NA	Water	533	74430
MRL 380-74430/22-A	Lab Control Sample	Total/NA	Water	533	74430
380-80996-E-1-A LMS	Matrix Spike	Total/NA	Water	533	74430
380-80996-F-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	74430

Analysis Batch: 74618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-80992-1	MOANALUA WELLS	Total/NA	Water	537.1	74403
380-80992-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	74403
MBL 380-74403/21-A	Method Blank	Total/NA	Water	537.1	74403
LCS 380-74403/23-A	Lab Control Sample	Total/NA	Water	537.1	74403
MRL 380-74403/22-A	Lab Control Sample	Total/NA	Water	537.1	74403
380-80722-U-1-A MS	Matrix Spike	Total/NA	Water	537.1	74403
380-80722-V-1-B MS	Matrix Spike	Total/NA	Water	537.1	74403

Analysis Batch: 74621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-80992-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	74397
380-80992-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1	74397
380-80992-5	FB: MOANALUA WELLS	Total/NA	Water	537.1	74397
380-80992-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	74397
380-80992-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	74397
380-80992-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1	74397
MBL 380-74397/21-A	Method Blank	Total/NA	Water	537.1	74397
LCS 380-74397/23-A	Lab Control Sample	Total/NA	Water	537.1	74397
MRL 380-74397/22-A	Lab Control Sample	Total/NA	Water	537.1	74397
380-80998-A-1-B MS	Matrix Spike	Total/NA	Water	537.1	74397
380-80998-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	74397

Lab Chronicle

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

Job ID: 380-80992-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-80992-1

Date Collected: 01/29/24 09:49

Matrix: Water

Date Received: 01/31/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74350	XTD8	EA POM	02/01/24 05:20
Total/NA	Analysis	533		1	74433	SZ9R	EA POM	02/01/24 15:05
Total/NA	Prep	537.1 DW			74403	A5GB	EA POM	02/01/24 11:38
Total/NA	Analysis	537.1		1	74618	Y5FM	EA POM	02/02/24 21:52

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-80992-2

Date Collected: 01/29/24 10:45

Matrix: Water

Date Received: 01/31/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74350	XTD8	EA POM	02/01/24 05:20
Total/NA	Analysis	533		1	74433	SZ9R	EA POM	02/01/24 14:37
Total/NA	Prep	537.1 DW			74403	A5GB	EA POM	02/01/24 11:38
Total/NA	Analysis	537.1		1	74618	Y5FM	EA POM	02/02/24 22:02

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-80992-3

Date Collected: 01/29/24 11:13

Matrix: Water

Date Received: 01/31/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74350	XTD8	EA POM	02/01/24 05:20
Total/NA	Analysis	533		1	74433	SZ9R	EA POM	02/01/24 15:15
Total/NA	Prep	537.1 DW			74397	SL5Q	EA POM	02/01/24 10:26
Total/NA	Analysis	537.1		1	74621	R6YA	EA POM	02/02/24 17:51

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-4

Date Collected: 01/29/24 10:21

Matrix: Water

Date Received: 01/31/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74350	XTD8	EA POM	02/01/24 05:20
Total/NA	Analysis	533		1	74433	SZ9R	EA POM	02/01/24 15:24
Total/NA	Prep	537.1 DW			74397	SL5Q	EA POM	02/01/24 10:26
Total/NA	Analysis	537.1		1	74621	R6YA	EA POM	02/02/24 18:01

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-80992-5

Date Collected: 01/29/24 09:49

Matrix: Water

Date Received: 01/31/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74350	XTD8	EA POM	02/01/24 05:20
Total/NA	Analysis	533		1	74433	SZ9R	EA POM	02/01/24 15:34
Total/NA	Prep	537.1 DW			74397	SL5Q	EA POM	02/01/24 10:26
Total/NA	Analysis	537.1		1	74621	R6YA	EA POM	02/02/24 18:10

Lab Chronicle

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

Job ID: 380-80992-1

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-80992-6

Date Collected: 01/29/24 10:45

Matrix: Water

Date Received: 01/31/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74350	XTD8	EA POM	02/01/24 05:20
Total/NA	Analysis	533		1	74433	SZ9R	EA POM	02/01/24 15:43
Total/NA	Prep	537.1 DW			74397	SL5Q	EA POM	02/01/24 10:26
Total/NA	Analysis	537.1		1	74621	R6YA	EA POM	02/02/24 18:20

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-80992-7

Date Collected: 01/29/24 11:13

Matrix: Water

Date Received: 01/31/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74430	T2EP	EA POM	02/01/24 15:50
Total/NA	Analysis	533		1	74573	SZ9R	EA POM	02/02/24 20:28
Total/NA	Prep	537.1 DW			74397	SL5Q	EA POM	02/01/24 10:26
Total/NA	Analysis	537.1		1	74621	R6YA	EA POM	02/02/24 18:30

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-80992-8

Date Collected: 01/29/24 10:21

Matrix: Water

Date Received: 01/31/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74430	T2EP	EA POM	02/01/24 15:50
Total/NA	Analysis	533		1	74573	SZ9R	EA POM	02/02/24 20:38
Total/NA	Prep	537.1 DW			74397	SL5Q	EA POM	02/01/24 10:26
Total/NA	Analysis	537.1		1	74621	R6YA	EA POM	02/02/24 18:40

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 [PFAS]

Job ID: 380-80992-1

Laboratory: Eurofins Eaton Analytical Pomona

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-24 *

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
533	533	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
533	533	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Water	Perfluorobutanoic acid (PFBA)
533	533	Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Water	Perfluoropentanoic acid (PFPeA)
537.1	537.1 DW	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

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

Method Summary

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

Job ID: 380-80992-1

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 [PFAS]

Job ID: 380-80992-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-80992-1	MOANALUA WELLS	Water	01/29/24 09:49	01/31/24 10:20
380-80992-2	AIEA GULCH WELLS PUMP 2	Water	01/29/24 10:45	01/31/24 10:20
380-80992-3	AIEA WELLS PUMPS 1&2 (260) P2	Water	01/29/24 11:13	01/31/24 10:20
380-80992-4	HALAWA WELLS UNITS 1&2 P1	Water	01/29/24 10:21	01/31/24 10:20
380-80992-5	FB: MOANALUA WELLS	Water	01/29/24 09:49	01/31/24 10:20
380-80992-6	FB: AIEA GULCH WELLS PUMP 2	Water	01/29/24 10:45	01/31/24 10:20
380-80992-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Water	01/29/24 11:13	01/31/24 10:20
380-80992-8	FB: HALAWA WELLS UNITS 1&2 P1	Water	01/29/24 10:21	01/31/24 10:20

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- 16

Monrovia, CA (Suite 100)
 750 Royal Oaks Drive Suite 100
 Monrovia CA 91016
 Phone (626) 386-1100

Chain of Custody Record

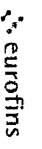
eurofins

Client Information Client Contact: Dr. Ron Fenstermacher City & County of Honolulu		Lab PW Arada Rachelle E Mail Rachelle.Arada@et.euronisus.com		Carmer Tracking No(s) 380-27941-2757 2		COC No 380-27941-2757 2			
Address 630 South Beretania Street, Chemistry Lab Honolulu State Zip HI 96843 Phone 808-748-5091 (tel) Email rfenstermacher@hbws.org		PWSID Due Date Requested TAT Requested (days) Compliance Project Δ No PO # C20525101 exp 05312023 WO # Project # 38001111 SOW#		State of Origin Analysis Requested Perform MS/MSD (Yes or No)		Page \uparrow of \downarrow Job #			
Project Name RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill Site		Field Filtered Sample (Yes or No)		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs 8015B_GRO_LL - (MOD) GRO C18 8015B_DRO_LL_CS - HNL Ranges C19-C24/C24-C36/C8-		Total Number of Containers Special Instructions/Note:			
Sample Identification MOANALUA WELLS AIEA GULCH WELLS PUMP2 AIEA WELLS PUMPS 1&2 (260) P2 HALAWA WELLS UNITS 1&2 P1 FB MOANALUA WELLS FB AIEA GULCH WELLS PUMP2 FB AIEA WELLS PUMPS 1 & 2 (260) FB HALAWA WELLS UNITS 1&2		Sample Date 22-Jan-2024 22-Jan-2024 22-Jan-2024 22-Jan-2024 22-Jan-2024 22-Jan-2024 22-Jan-2024 22-Jan-2024		Sample Time 0949 1045 1113 1021 0949 1045 1113 1021		Sample Type (C=Comp, G=grab) G G G G G G G G G G G G G		Matrix (W=water, S=solid, O=soil, B=BIOTISSUE ANALY) Water Water Water Water Water Water Water Water Water Water Water Water	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested I, II, III, IV, Other (specify)		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Empty Kit Relinquished by Relinquished by Relinquished by Relinquished by		Date 20250124 20240124 20240124 20240124		Date/Time 1400 10:20 10:20 10:20		Method of Shipment Date/Time Date/Time Date/Time Date/Time			
Custody Seals Intact Δ Yes Δ No		Colder Temperature(s) °C and Other Remarks (751A) 013-01-1.6 (2) 15' 0.1-1.4 P (3) 31' 0.1-3.0' GEL-FROZEN		Received by Received by Received by		Company Company Company			



Monrovia, CA (Suite 100)
 750 Royal Oaks Drive Suite 100
 Monrovia CA 91016
 Phone (626) 386-1100

Chain of Custody Record



Client Information
 Client Contact: Dr Ron Fenstermacher
 Phone: 808-748-5840
 City & County of Honolulu
 Address: 630 South Beretania Street, Chemistry Lab
 City: Honolulu
 State Zip: HI, 96843
 Phone: 808-748-5091 (tel)
 Email: rfenstermacher@hbwms.cig
 Project Name: RED-HILL/HBWS sites Event Desc RUSH Weekly Red Hill
 Site: RED-HILL/HBWS sites Event Desc RUSH Weekly Red Hill

Sampler: Palley
 Lab PM: Arada, Rachelle
 E-Mail: Rachelle.Arada@eurofins.com
 Carrier Tracking No(s): 380-27984-2757 2
 Page 1 of 1

Sample Identification	Sample Date	Sample Time	Sample Type (G=grab)	Matrix (Inorganic, Semisolid, Pressure Aque)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Carrier Tracking No(s)	COC No
MOANALUA WELLS	26-Jan-2024	0949	G	Water	R	X	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	380-27984-2757 2	380-27984-2757 2
AIEA GULCH WELLS PUMP2	26-Jan-2024	1045	G	Water	A	X	8015B_GRO_LL - (MOD) GRO		
AIEA WELLS PUMPS 1&2 (260) P2	26-Jan-2024	1113	G	Water	Q	X	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18		
HALAWA WELLS UNITS 1&2 P1	26-Jan-2024	1021	G	Water	Q	X	525 2_PREC - (MOD) 525plus PLUS TICs		
					Y		537 1_DW_PREC - 537 1 Full List		
					N		533 - All Analytes		

Analysis Requested

Field Filtered Sample (Yes or No) **Perform MS/MSD (Yes or No)**

Special Instructions/Note: chromatated, chlorinated, 100% OF 4 BROKEN FOR BOTH SITES - 6/21/2024

Total Number of containers: chromatated, chlorinated

Preservation Codes:
 A - HCL
 B - NaOH
 C - Zn Acetate
 D - Nitric Acid
 E - NaHSO4
 F - MeOH
 G - Ammonia
 H - Ascorbic Acid
 I - Ice
 J - DI Water
 K - EDTA
 L - EDTA
 Other:
 M - Hexane
 N - None
 O - Asinac2
 P - Na2OAS
 Q - Na2SO3
 R - Na2S2O3
 S - H2SO4
 T - TSP Dodecahydrate
 U - Acetone
 V - MCAA
 W - pH 4-5
 Y - Trizma
 Z - other (specify)

Sample Identification	Sample Date	Sample Time	Sample Type (G=grab)	Matrix (Inorganic, Semisolid, Pressure Aque)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Carrier Tracking No(s)	COC No
MOANALUA WELLS	26-Jan-2024	0949	G	Water	R	X	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	380-27984-2757 2	380-27984-2757 2
AIEA GULCH WELLS PUMP2	26-Jan-2024	1045	G	Water	A	X	8015B_GRO_LL - (MOD) GRO		
AIEA WELLS PUMPS 1&2 (260) P2	26-Jan-2024	1113	G	Water	Q	X	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18		
HALAWA WELLS UNITS 1&2 P1	26-Jan-2024	1021	G	Water	Q	X	525 2_PREC - (MOD) 525plus PLUS TICs		
					Y		537 1_DW_PREC - 537 1 Full List		
					N		533 - All Analytes		

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

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

Empty Kit Relinquished by: Palley Date: 2024 Time: 10:20

Relinquished by: Palley Date/Time: 2024 Company: HBWS

Relinquished by: Palley Date/Time: 2024 Company: HBWS

Relinquished by: Palley Date/Time: 2024 Company: HBWS

Custody Seals Intact: Yes No

Custody Seal No: 751A

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

Special Instructions/CC Requirements: 380-80984 COC

Method of Storage: FED EX Date/Time: 01/31/2024 Company: ECAP

Received by: RETNER Date/Time: 01/31/2024 Company: ECAP

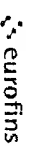
Received by: RETNER Date/Time: 01/31/2024 Company: ECAP

Cooler Temperature(s) °C and Other Remarks: 15.0 14.1 13.1 12.1 11.6 10.1 9.1 8.0

Monrovia, CA (Suite 100)

750 Royal Oaks Drive Suite 100
 Monrovia CA 91016
 Phone (626) 386-1100

Chain of Custody Record



Client Information
 Client Contact: Dr. Ron Fenstermacher
 Company: City & County of Honolulu
 Address: 630 South Beretama Street, Chemistry Lab
 City: Honolulu
 State Zip: HI 96843
 Phone: 808-748-5091 (tel)
 Email: rfenstermacher@hbws.org

Sampler: Ballou
 Phone: 808-748-5840
 Lab PM: Arada Rachelle
 E Mail: Rachelle.Arada@el.eurofins.com

Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill
 Project #: 38001111
 SSOV#:

Due Date Requested:
 TAT Requested (days):
 Compliance Project:
 PO #: C20525101 exp 05312023
 WOC #:

PWSID:
 State of Origin:

CCOC No: 380-27941-2757.2
 Page 1 of 1
 Job #:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Sewage, etc.)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Carrier Tracking No(s)	Preservation Codes	Special Instructions/Note:
MOANALUA WELLS	28 Jan-2024	0949	G	Water		X	X	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs 8015B_GRO_LL - (MOD) GRO 8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18 525_2_PREC - (MOD) 525plus PLUS TICs 537_1_DW_PREC - 537 1 Full List 533 - All Analytes		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCA W - pH 4.5 Y - Trizma Z - other (specify)	chlorinated chlorinated
AIEA GULCH WELLS PUMP2	28 Jan-2024	1045	G	Water		X	X				
AIEA WELLS PUMPS 1&2 (260) P2	28 Jan-2024	1113	G	Water		X	X				
HALAWA WELLS UNITS 1&2 P1	29 Jan-2024	1021	G	Water		X	X				
FB MOANALUA WELLS	29 Jan-2024	0949		Water							
FB AIEA GULCH WELLS PUMP2	29 Jan-2024	1045		Water							
FB AIEA WELLS PUMPS 1&2 (260)	29 Jan-2024	1113		Water							
FB HALAWA WELLS UNITS 1&2	29 Jan-2024	1021		Water							



380-80992 COC

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

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

Empty Kit Relinquished by: Date:

Relinquished by: Ballou Date/Time: 05/28/2024 14:00 Company: HBWS

Relinquished by: Date/Time: Company:

Relinquished by: Date/Time: Company:

Custody Seals Intact: Custody Seal No:

Special Instructions/OC Requirements:

Method of Shipment: Fed Ex 3750 0546 5225

Received by: Date/Time: 01/31/2024 10:20 Company: GCAP

Received by: Date/Time: Company:

Color Temperature(s) °C and Other Remarks: 751A 0.17° 0.12° 1.6° 215° 0.1° 1.4° 3.3° 0.1° 2.3° 0.1°

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-80992-1

Login Number: 80992
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and 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	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

