

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

ANALYTICAL REPORT

PREPARED FOR

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

Generated 9/12/2024 11:33:42 AM

JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-111678-1

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization



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Authorized for release by
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Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Action Limit Summary	15
Surrogate Summary	17
Isotope Dilution Summary	18
QC Sample Results	20
QC Association Summary	37
Lab Chronicle	39
Certification Summary	40
Method Summary	41
Sample Summary	42
Chain of Custody	43
Receipt Checklists	44

Definitions/Glossary

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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

Job ID: 380-111678-1

Job ID: 380-111678-1

Eurofins Eaton Analytical Pomona

Job Narrative 380-111678-1

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

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

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

Receipt

The samples were received on 9/5/2024 10:24 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C.

PFAS

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

Detection Summary

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-1

No Detections.

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-111678-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.7		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.2		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.1		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)	2.4		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 AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-3

No Detections.

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-111678-4

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-1

Date Collected: 09/03/24 11:46

Matrix: Water

Date Received: 09/05/24 10:24

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		09/08/24 16:00	09/09/24 18:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/08/24 16:00	09/09/24 18:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	86		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C6 PFDA	95		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C5 PFHxA	91		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C4 PFHpA	90		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C8 PFOA	94		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C9 PFNA	96		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C7 PFUnA	98		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C2 PFDoA	99		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C4 PFBA	92		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C5 PFPeA	94		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C3 PFBS	104		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C3 PFHxS	105		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C8 PFOS	102		50 - 200	09/08/24 16:00	09/09/24 18:09	1

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Client Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-1

Date Collected: 09/03/24 11:46

Matrix: Water

Date Received: 09/05/24 10:24

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	112		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C2-6:2-FTS	109		50 - 200	09/08/24 16:00	09/09/24 18:09	1
13C2-8:2-FTS	106		50 - 200	09/08/24 16:00	09/09/24 18:09	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		09/07/24 14:03	09/09/24 15:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	102		70 - 130			09/07/24 14:03	09/09/24 15:46	1
13C2 PFHxA	107		70 - 130			09/07/24 14:03	09/09/24 15:46	1
13C2 PFDA	110		70 - 130			09/07/24 14:03	09/09/24 15:46	1
13C3-GenX	92		70 - 130			09/07/24 14:03	09/09/24 15:46	1

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-111678-2

Date Collected: 09/03/24 12:21

Matrix: Water

Date Received: 09/05/24 10:24

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		09/09/24 06:48	09/10/24 06:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1

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Client Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-111678-2

Date Collected: 09/03/24 12:21

Matrix: Water

Date Received: 09/05/24 10:24

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		09/09/24 06:48	09/10/24 06:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluorooctanesulfonic acid (PFOS)	2.7		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluorooctanoic acid (PFOA)	2.2		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluoropentanoic acid (PFPeA)	2.1		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:43	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	84		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C6 PFDA	82		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C5 PFHxA	86		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C4 PFHpA	88		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C8 PFOA	83		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C9 PFNA	84		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C7 PFUnA	82		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C2 PFDoA	86		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C4 PFBA	95		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C5 PFPeA	100		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C3 PFBS	100		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C3 PFHxS	103		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C8 PFOS	104		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C2-4:2-FTS	119		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C2-6:2-FTS	117		50 - 200	09/09/24 06:48	09/10/24 06:43	1
13C2-8:2-FTS	104		50 - 200	09/09/24 06:48	09/10/24 06:43	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		09/07/24 14:03	09/09/24 15:56	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-111678-2

Date Collected: 09/03/24 12:21

Matrix: Water

Date Received: 09/05/24 10:24

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	3.1		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluorooctanoic acid (PFOA)	2.4		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 15:56	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	105		70 - 130			09/07/24 14:03	09/09/24 15:56	1
13C2 PFHxA	106		70 - 130			09/07/24 14:03	09/09/24 15:56	1
13C2 PFDA	107		70 - 130			09/07/24 14:03	09/09/24 15:56	1
13C3-GenX	90		70 - 130			09/07/24 14:03	09/09/24 15:56	1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-3

Date Collected: 09/03/24 11:46

Matrix: Water

Date Received: 09/05/24 10:24

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		09/09/24 06:48	09/10/24 08:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-3

Date Collected: 09/03/24 11:46

Matrix: Water

Date Received: 09/05/24 10:24

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 08:57	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	98		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C6 PFDA	93		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C5 PFHxA	97		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C4 PFHpA	103		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C8 PFOA	101		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C9 PFNA	95		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C7 PFUnA	90		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C2 PFDoA	84		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C4 PFBA	107		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C5 PFPeA	111		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C3 PFBS	104		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C3 PFHxS	105		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C8 PFOS	102		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C2-4:2-FTS	111		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C2-6:2-FTS	113		50 - 200	09/09/24 06:48	09/10/24 08:57	1
13C2-8:2-FTS	100		50 - 200	09/09/24 06:48	09/10/24 08:57	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		09/07/24 14:03	09/09/24 16:05	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-3

Date Collected: 09/03/24 11:46

Matrix: Water

Date Received: 09/05/24 10:24

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	102		70 - 130			09/07/24 14:03	09/09/24 16:05	1
13C2 PFHxA	107		70 - 130			09/07/24 14:03	09/09/24 16:05	1
13C2 PFDA	111		70 - 130			09/07/24 14:03	09/09/24 16:05	1
13C3-GenX	94		70 - 130			09/07/24 14:03	09/09/24 16:05	1

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-111678-4

Date Collected: 09/03/24 12:21

Matrix: Water

Date Received: 09/05/24 10:24

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		09/09/24 06:48	09/10/24 09:06	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-111678-4

Date Collected: 09/03/24 12:21

Matrix: Water

Date Received: 09/05/24 10:24

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/09/24 06:48	09/10/24 09:06	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	100		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C6 PFDA	98		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C5 PFHxA	104		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C4 PFHpA	109		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C8 PFOA	108		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C9 PFNA	105		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C7 PFUnA	103		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C2 PFDoA	102		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C4 PFBA	108		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C5 PFPeA	114		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C3 PFBS	109		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C3 PFHxS	107		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C8 PFOS	108		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C2-4:2-FTS	112		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C2-6:2-FTS	121		50 - 200			09/09/24 06:48	09/10/24 09:06	1
13C2-8:2-FTS	110		50 - 200			09/09/24 06:48	09/10/24 09:06	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		09/07/24 14:03	09/09/24 16:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1

Client Sample Results

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

Job ID: 380-111678-1
 SDG: Weekly PFAS

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-111678-4

Date Collected: 09/03/24 12:21

Matrix: Water

Date Received: 09/05/24 10:24

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		09/07/24 14:03	09/09/24 16:25	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/07/24 14:03	09/09/24 16:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	110		70 - 130			09/07/24 14:03	09/09/24 16:25	1
13C2 PFHxA	104		70 - 130			09/07/24 14:03	09/09/24 16:25	1
13C2 PFDA	116		70 - 130			09/07/24 14:03	09/09/24 16:25	1
13C3-GenX	91		70 - 130			09/07/24 14:03	09/09/24 16:25	1

Action Limit Summary

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-1

Compliance Check

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

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

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-111678-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.7		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	2.2		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.1		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.4		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-3

Compliance Check

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

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

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2 (Continued)

Lab Sample ID: 380-111678-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-111678-4

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-111678-1
 SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-111408-AV-1-A MS	Matrix Spike	107	102	107	90
380-111408-AW-1-A MSD	Matrix Spike Duplicate	103	95	100	86
380-111678-1	AIEA GULCH WELLS PUMP 2	102	107	110	92
380-111678-2	KA'AMILO WELLS	105	106	107	90
380-111678-3	FB AIEA GULCH WELLS PUMP 2	102	107	111	94
380-111678-4	FB KA'AMILO WELLS	110	104	116	91
LCS 380-107309/23-A	Lab Control Sample	100	97	100	84
MBL 380-107309/21-A	Method Blank	113	99	104	85
MRL 380-107309/22-A	Lab Control Sample	105	100	102	83

Surrogate Legend

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



Isotope Dilution Summary

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-111678-1	AIEA GULCH WELLS PUMP 2	86	95	91	90	94	96	98	99
380-111678-1 MS	AIEA GULCH WELLS PUMP 2	85	98	91	91	92	100	100	101
380-111678-1 MSD	AIEA GULCH WELLS PUMP 2	87	104	94	93	98	97	105	104
380-111678-2	KA'AMILO WELLS	84	82	86	88	83	84	82	86
380-111678-2 MS	KA'AMILO WELLS	83	92	89	90	89	89	93	89
380-111678-2 MSD	KA'AMILO WELLS	90	74	85	83	78	76	81	85
380-111678-3	FB AIEA GULCH WELLS PUMP 2	98	93	97	103	101	95	90	84
380-111678-4	FB KA'AMILO WELLS	100	98	104	109	108	105	103	102
LCS 380-107331/24-A	Lab Control Sample	103	102	104	106	108	102	106	102
LCS 380-107401/22-A	Lab Control Sample	114	103	107	108	110	108	105	107
MBL 380-107331/22-A	Method Blank	101	99	107	105	105	103	100	104
MBL 380-107401/20-A	Method Blank	93	100	104	101	103	104	101	105
MRL 380-107331/23-A	Lab Control Sample	102	103	108	106	108	102	106	106
MRL 380-107401/21-A	Lab Control Sample	96	107	111	115	109	108	109	106

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-111678-1	AIEA GULCH WELLS PUMP 2	92	94	104	105	102	112	109	106
380-111678-1 MS	AIEA GULCH WELLS PUMP 2	88	87	112	110	109	131	118	114
380-111678-1 MSD	AIEA GULCH WELLS PUMP 2	94	90	109	112	111	120	121	118
380-111678-2	KA'AMILO WELLS	95	100	100	103	104	119	117	104
380-111678-2 MS	KA'AMILO WELLS	101	104	99	101	102	111	117	104
380-111678-2 MSD	KA'AMILO WELLS	99	101	102	106	105	127	120	109
380-111678-3	FB AIEA GULCH WELLS PUMP 2	107	111	104	105	102	111	113	100
380-111678-4	FB KA'AMILO WELLS	108	114	109	107	108	112	121	110
LCS 380-107331/24-A	Lab Control Sample	107	106	106	108	107	111	113	108
LCS 380-107401/22-A	Lab Control Sample	106	117	106	105	106	117	120	108
MBL 380-107331/22-A	Method Blank	103	103	106	104	102	120	116	106
MBL 380-107401/20-A	Method Blank	106	114	108	105	106	114	122	102
MRL 380-107331/23-A	Lab Control Sample	110	107	108	108	109	119	115	113
MRL 380-107401/21-A	Lab Control Sample	109	113	103	105	109	114	117	107

Surrogate Legend

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

Isotope Dilution Summary

Client: City & County of Honolulu
Project/Site: RED-HILL
82FTS = 13C2-8:2-FTS

Job ID: 380-111678-1
SDG: Weekly PFAS

- 1
- 2
- 3
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- 14
- 15
- 16
- 17

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-107331/22-A
Matrix: Water
Analysis Batch: 107438

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107331

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		09/08/24 16:00	09/09/24 17:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/08/24 16:00	09/09/24 17:38	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	101		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C6 PFDA	99		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C5 PFHxA	107		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C4 PFHpA	105		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C8 PFOA	105		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C9 PFNA	103		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C7 PFUnA	100		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C2 PFDoA	104		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C4 PFBA	103		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C5 PFPeA	103		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C3 PFBS	106		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C3 PFHxS	104		50 - 200	09/08/24 16:00	09/09/24 17:38	1

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QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-107331/22-A
Matrix: Water
Analysis Batch: 107438

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107331

<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	102		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C2-4:2-FTS	120		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C2-6:2-FTS	116		50 - 200	09/08/24 16:00	09/09/24 17:38	1
13C2-8:2-FTS	106		50 - 200	09/08/24 16:00	09/09/24 17:38	1

Lab Sample ID: LCS 380-107331/24-A
Matrix: Water
Analysis Batch: 107438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107331

<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)	60.2	55.7		ng/L		92	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	58.0		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	59.6		ng/L		99	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	58.9		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	61.5		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	61.3		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	60.7		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	59.4		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	60.0		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	58.4		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	60.2	58.6		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	57.2		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	57.5		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	56.6		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	58.7		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	62.6		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	63.2		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	64.3		ng/L		107	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	59.0		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	59.0		ng/L		98	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	57.4		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	58.5		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	58.8		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	61.3		ng/L		102	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-107331/24-A
Matrix: Water
Analysis Batch: 107438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107331

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.2	61.8		ng/L		103	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	103		50 - 200				
13C6 PFDA	102		50 - 200				
13C5 PFHxA	104		50 - 200				
13C4 PFHpA	106		50 - 200				
13C8 PFOA	108		50 - 200				
13C9 PFNA	102		50 - 200				
13C7 PFUnA	106		50 - 200				
13C2 PFDoA	102		50 - 200				
13C4 PFBA	107		50 - 200				
13C5 PFPeA	106		50 - 200				
13C3 PFBS	106		50 - 200				
13C3 PFHxS	108		50 - 200				
13C8 PFOS	107		50 - 200				
13C2-4:2-FTS	111		50 - 200				
13C2-6:2-FTS	113		50 - 200				
13C2-8:2-FTS	108		50 - 200				

Lab Sample ID: MRL 380-107331/23-A
Matrix: Water
Analysis Batch: 107438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107331

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.96	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.00	J	ng/L		99	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.96	J	ng/L		98	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.96	J	ng/L		98	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.00	J	ng/L		99	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.01	J	ng/L		100	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-107331/23-A
Matrix: Water
Analysis Batch: 107438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107331

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.09	J	ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.18	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.50	J	ng/L		124	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.06	J	ng/L		103	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.95	J	ng/L		97	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.07	J	ng/L		103	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	103		50 - 200
13C5 PFHxA	108		50 - 200
13C4 PFHpA	106		50 - 200
13C8 PFOA	108		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	106		50 - 200
13C2 PFDoA	106		50 - 200
13C4 PFBA	110		50 - 200
13C5 PFPeA	107		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	119		50 - 200
13C2-6:2-FTS	115		50 - 200
13C2-8:2-FTS	113		50 - 200

Lab Sample ID: 380-111678-1 MS
Matrix: Water
Analysis Batch: 107438

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 107331

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	53.7		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	54.7		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	52.9		ng/L		88	70 - 130

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111678-1 MS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 107438

Prep Batch: 107331

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.4	57.2		ng/L		95	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	56.4		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	56.6		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	56.4		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	57.8		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	57.4		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	55.9		ng/L		92	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	54.0		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	54.4		ng/L		90	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	57.3		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	57.8		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	56.7		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	55.6		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	54.6		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	58.1		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	51.7		ng/L		86	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	56.2		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	56.0		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	54.4		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	59.6		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	55.7		ng/L		92	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	57.7		ng/L		96	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	85		50 - 200
13C6 PFDA	98		50 - 200
13C5 PFHxA	91		50 - 200
13C4 PFHpA	91		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	100		50 - 200
13C2 PFDoA	101		50 - 200
13C4 PFBA	88		50 - 200
13C5 PFPeA	87		50 - 200
13C3 PFBS	112		50 - 200
13C3 PFHxS	110		50 - 200
13C8 PFOS	109		50 - 200

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111678-1 MS
Matrix: Water
Analysis Batch: 107438

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 107331

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	131		50 - 200
13C2-6:2-FTS	118		50 - 200
13C2-8:2-FTS	114		50 - 200

Lab Sample ID: 380-111678-1 MSD
Matrix: Water
Analysis Batch: 107438

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 107331

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		60.2	55.3		ng/L		92	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	57.7		ng/L		96	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	53.0		ng/L		88	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	58.0		ng/L		96	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	59.0		ng/L		98	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	55.2		ng/L		92	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	57.8		ng/L		96	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	56.8		ng/L		94	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	58.0		ng/L		96	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	55.5		ng/L		91	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	58.1		ng/L		96	70 - 130	7	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	56.5		ng/L		94	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	56.9		ng/L		95	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	55.7		ng/L		92	70 - 130	4	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	54.4		ng/L		90	70 - 130	4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	59.0		ng/L		98	70 - 130	6	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	59.2		ng/L		98	70 - 130	8	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	57.1		ng/L		94	70 - 130	2	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	50.2		ng/L		83	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	58.0		ng/L		96	70 - 130	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	52.3		ng/L		87	70 - 130	7	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	56.8		ng/L		94	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	60.2		ng/L		99	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	58.7		ng/L		97	70 - 130	5	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	57.9		ng/L		96	70 - 130	0	30

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Isotope Dilution	MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	87		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	94		50 - 200
13C4 PFHpA	93		50 - 200
13C8 PFOA	98		50 - 200
13C9 PFNA	97		50 - 200
13C7 PFUnA	105		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	94		50 - 200
13C5 PFPeA	90		50 - 200
13C3 PFBS	109		50 - 200
13C3 PFHxS	112		50 - 200
13C8 PFOS	111		50 - 200
13C2-4:2-FTS	120		50 - 200
13C2-6:2-FTS	121		50 - 200
13C2-8:2-FTS	118		50 - 200

Lab Sample ID: MBL 380-107401/20-A
Matrix: Water
Analysis Batch: 107538

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107401

Analyte	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		09/09/24 06:48	09/10/24 06:14	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-107401/20-A
Matrix: Water
Analysis Batch: 107538

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107401

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/09/24 06:48	09/10/24 06:14	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C6 PFDA	100		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C5 PFHxA	104		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C4 PFHpA	101		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C8 PFOA	103		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C9 PFNA	104		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C7 PFUnA	101		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C2 PFDoA	105		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C4 PFBA	106		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C5 PFPeA	114		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C3 PFBS	108		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C3 PFHxS	105		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C8 PFOS	106		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C2-4:2-FTS	114		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C2-6:2-FTS	122		50 - 200	09/09/24 06:48	09/10/24 06:14	1
13C2-8:2-FTS	102		50 - 200	09/09/24 06:48	09/10/24 06:14	1

Lab Sample ID: LCS 380-107401/22-A
Matrix: Water
Analysis Batch: 107538

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107401

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	56.1		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	54.8		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	58.0		ng/L		97	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	54.3		ng/L		90	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	60.1		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	60.8		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	57.7		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	58.7		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	60.9		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	56.7		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	60.1	55.0		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	57.1		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	58.7		ng/L		98	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-107401/22-A
Matrix: Water
Analysis Batch: 107538

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107401

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	60.1	61.6		ng/L		103	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	58.9		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	60.2		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	57.8		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	58.4		ng/L		97	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	53.2		ng/L		89	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.1	58.0		ng/L		97	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	60.8		ng/L		101	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	54.6		ng/L		91	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	56.7		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	59.8		ng/L		100	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.1	58.6		ng/L		97	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	114		50 - 200
13C6 PFDA	103		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	108		50 - 200
13C8 PFOA	110		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	105		50 - 200
13C2 PFDoA	107		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	117		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	105		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	117		50 - 200
13C2-6:2-FTS	120		50 - 200
13C2-8:2-FTS	108		50 - 200

Lab Sample ID: MRL 380-107401/21-A
Matrix: Water
Analysis Batch: 107538

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107401

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.91	J	ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.73	J	ng/L		86	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-107401/21-A
Matrix: Water
Analysis Batch: 107538

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107401

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.91	J	ng/L		95	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.14	J	ng/L		107	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.92	J	ng/L		96	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	1.94	J	ng/L		97	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.25	J	ng/L		112	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.01	J	ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.04	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.17	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.35	J	ng/L		117	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.86	J	ng/L		93	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.87	J	ng/L		93	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	1.96	J	ng/L		97	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.94	J	ng/L		97	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.87	J	ng/L		93	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	96		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	111		50 - 200
13C4 PFHpA	115		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	106		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	105		50 - 200

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-107401/21-A
Matrix: Water
Analysis Batch: 107538

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107401

<i>Isotope Dilution</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	114		50 - 200
13C2-6:2-FTS	117		50 - 200
13C2-8:2-FTS	107		50 - 200

Lab Sample ID: 380-111678-2 MS
Matrix: Water
Analysis Batch: 107538

Client Sample ID: KA'AMILO WELLS
Prep Type: Total/NA
Prep Batch: 107401

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS 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		60.4	60.4		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		60.4	58.3		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	57.3		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	64.3		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	66.0		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	56.9		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	62.5		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	61.7		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	2.5		60.4	64.3		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	2.1		60.4	62.6		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	57.0		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.7		60.4	61.4		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	2.2		60.4	63.0		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	61.2		ng/L		101	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	61.0		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	64.6		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	60.7		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	57.9		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	61.4		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	61.1		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	58.5		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	60.6		ng/L		100	70 - 130
Perfluoropentanoic acid (PFPeA)	2.1		60.4	62.9		ng/L		101	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	61.7		ng/L		102	70 - 130

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111678-2 MS

Matrix: Water

Analysis Batch: 107538

Client Sample ID: KA'AMILO WELLS

Prep Type: Total/NA

Prep Batch: 107401

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	61.5		ng/L		101	70 - 130
MS MS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	83		50 - 200						
13C6 PFDA	92		50 - 200						
13C5 PFHxA	89		50 - 200						
13C4 PFHpA	90		50 - 200						
13C8 PFOA	89		50 - 200						
13C9 PFNA	89		50 - 200						
13C7 PFUnA	93		50 - 200						
13C2 PFDoA	89		50 - 200						
13C4 PFBA	101		50 - 200						
13C5 PFPeA	104		50 - 200						
13C3 PFBS	99		50 - 200						
13C3 PFHxS	101		50 - 200						
13C8 PFOS	102		50 - 200						
13C2-4:2-FTS	111		50 - 200						
13C2-6:2-FTS	117		50 - 200						
13C2-8:2-FTS	104		50 - 200						

Lab Sample ID: 380-111678-2 MSD

Matrix: Water

Analysis Batch: 107538

Client Sample ID: KA'AMILO WELLS

Prep Type: Total/NA

Prep Batch: 107401

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	57.4		ng/L		95	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	56.9		ng/L		94	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	55.2		ng/L		91	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	61.2		ng/L		101	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	64.0		ng/L		103	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		60.4	65.3		ng/L		108	70 - 130	14	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	62.3		ng/L		103	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	59.3		ng/L		96	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	2.5		60.4	62.1		ng/L		99	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	2.1		60.4	62.8		ng/L		101	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		60.4	60.1		ng/L		100	70 - 130	5	30
Perfluorooctanesulfonic acid (PFOS)	2.7		60.4	61.9		ng/L		98	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	2.2		60.4	62.5		ng/L		100	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	60.9		ng/L		101	70 - 130	0	30
Perfluorobutanoic acid (PFBA)	<2.0		60.4	59.8		ng/L		98	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111678-2 MSD

Matrix: Water

Analysis Batch: 107538

Client Sample ID: KA'AMILO WELLS

Prep Type: Total/NA

Prep Batch: 107401

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	58.7		ng/L		97	70 - 130	9	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	57.4		ng/L		95	70 - 130	6	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	57.3		ng/L		95	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	69.3		ng/L		115	70 - 130	12	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	61.9		ng/L		103	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	60.8		ng/L		101	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	60.4		ng/L		100	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	2.1		60.4	60.3		ng/L		96	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	61.0		ng/L		101	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	60.2		ng/L		99	70 - 130	2	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	90		50 - 200
13C6 PFDA	74		50 - 200
13C5 PFHxA	85		50 - 200
13C4 PFHpA	83		50 - 200
13C8 PFOA	78		50 - 200
13C9 PFNA	76		50 - 200
13C7 PFUnA	81		50 - 200
13C2 PFDoA	85		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	101		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	127		50 - 200
13C2-6:2-FTS	120		50 - 200
13C2-8:2-FTS	109		50 - 200

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

Lab Sample ID: MBL 380-107309/21-A

Matrix: Water

Analysis Batch: 107424

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 107309

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		09/07/24 14:03	09/09/24 13:52	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1

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QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-107309/21-A
Matrix: Water
Analysis Batch: 107424

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107309

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/07/24 14:03	09/09/24 13:52	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130	09/07/24 14:03	09/09/24 13:52	1
13C2 PFHxA	99		70 - 130	09/07/24 14:03	09/09/24 13:52	1
13C2 PFDA	104		70 - 130	09/07/24 14:03	09/09/24 13:52	1
13C3-GenX	85		70 - 130	09/07/24 14:03	09/09/24 13:52	1

Lab Sample ID: LCS 380-107309/23-A
Matrix: Water
Analysis Batch: 107424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107309

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.0	43.2		ng/L		86	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.0	57.3		ng/L		115	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.0	49.2		ng/L		98	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.0	53.2		ng/L		106	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.0	53.4		ng/L		107	70 - 130
Perfluorohexanoic acid (PFHxA)	50.0	50.0		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	50.0	48.3		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	50.0	53.5		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	50.0	51.2		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.0	55.2		ng/L		110	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.0	53.3		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.0	51.1		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	50.0	51.9		ng/L		104	70 - 130

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QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-107309/23-A
Matrix: Water
Analysis Batch: 107424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107309

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	50.0	49.1		ng/L		98	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.0	49.0		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.0	55.6		ng/L		111	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.0	54.5		ng/L		109	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.0	51.2		ng/L		102	70 - 130
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
d5-NEtFOSAA	100		70 - 130				
13C2 PFHxA	97		70 - 130				
13C2 PFDA	100		70 - 130				
13C3-GenX	84		70 - 130				

Lab Sample ID: MRL 380-107309/22-A
Matrix: Water
Analysis Batch: 107424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107309

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.83	J	ng/L		91	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.49	J	ng/L		124	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.13	J	ng/L		106	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.30	J	ng/L		115	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.11	J	ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.27	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.41	J	ng/L		121	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.33	J	ng/L		117	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.08	J	ng/L		104	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.28	J	ng/L		114	50 - 150

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-107309/22-A
Matrix: Water
Analysis Batch: 107424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107309

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.31	J	ng/L		116	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.15	J	ng/L		107	50 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
d5-NEtFOSAA	105		70 - 130				
13C2 PFHxA	100		70 - 130				
13C2 PFDA	102		70 - 130				
13C3-GenX	83		70 - 130				

Lab Sample ID: 380-111408-AV-1-A MS
Matrix: Water
Analysis Batch: 107424

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 107309

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	22.7		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	30.6		ng/L		120	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	27.6		ng/L		110	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	28.0		ng/L		112	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	28.0		ng/L		112	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.2		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.6		ng/L		106	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	29.5		ng/L		116	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.3		ng/L		109	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	29.5		ng/L		118	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	29.1		ng/L		116	70 - 130
Perfluoroheptanoic acid (PFHpA)	2.0		25.1	28.1		ng/L		112	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	27.8		ng/L		111	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	26.0		ng/L		104	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	26.4		ng/L		105	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	28.9		ng/L		115	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	29.0		ng/L		116	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	26.7		ng/L		107	70 - 130

QC Sample Results

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111408-AV-1-A MS
Matrix: Water
Analysis Batch: 107424

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 107309

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	107		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	107		70 - 130
13C3-GenX	90		70 - 130

Lab Sample ID: 380-111408-AW-1-A MSD
Matrix: Water
Analysis Batch: 107424

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 107309

<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		24.9	22.4		ng/L		90	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.9	29.9		ng/L		118	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		24.9	26.2		ng/L		105	70 - 130	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.9	27.4		ng/L		110	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.9	27.7		ng/L		111	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		24.9	25.2		ng/L		101	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		24.9	25.8		ng/L		104	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		24.9	28.5		ng/L		113	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		24.9	27.2		ng/L		109	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.9	28.4		ng/L		114	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.9	28.5		ng/L		115	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		24.9	27.0		ng/L		108	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		24.9	27.0		ng/L		109	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		24.9	25.6		ng/L		103	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.9	25.7		ng/L		103	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.9	29.3		ng/L		118	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.9	28.6		ng/L		115	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.9	26.0		ng/L		105	70 - 130	3	30

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	95		70 - 130
13C2 PFDA	100		70 - 130
13C3-GenX	86		70 - 130

QC Association Summary

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

Job ID: 380-111678-1
SDG: Weekly PFAS

LCMS

Prep Batch: 107309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111678-1	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-111678-2	KA'AMILO WELLS	Total/NA	Water	537.1 DW	
380-111678-3	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-111678-4	FB KA'AMILO WELLS	Total/NA	Water	537.1 DW	
MBL 380-107309/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-107309/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-107309/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-111408-AV-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-111408-AW-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 107331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111678-1	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
MBL 380-107331/22-A	Method Blank	Total/NA	Water	533	
LCS 380-107331/24-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-107331/23-A	Lab Control Sample	Total/NA	Water	533	
380-111678-1 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-111678-1 MSD	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	

Prep Batch: 107401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111678-2	KA'AMILO WELLS	Total/NA	Water	533	
380-111678-3	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-111678-4	FB KA'AMILO WELLS	Total/NA	Water	533	
MBL 380-107401/20-A	Method Blank	Total/NA	Water	533	
LCS 380-107401/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-107401/21-A	Lab Control Sample	Total/NA	Water	533	
380-111678-2 MS	KA'AMILO WELLS	Total/NA	Water	533	
380-111678-2 MSD	KA'AMILO WELLS	Total/NA	Water	533	

Analysis Batch: 107424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111678-1	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	107309
380-111678-2	KA'AMILO WELLS	Total/NA	Water	537.1	107309
380-111678-3	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	107309
380-111678-4	FB KA'AMILO WELLS	Total/NA	Water	537.1	107309
MBL 380-107309/21-A	Method Blank	Total/NA	Water	537.1	107309
LCS 380-107309/23-A	Lab Control Sample	Total/NA	Water	537.1	107309
MRL 380-107309/22-A	Lab Control Sample	Total/NA	Water	537.1	107309
380-111408-AV-1-A MS	Matrix Spike	Total/NA	Water	537.1	107309
380-111408-AW-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	107309

Analysis Batch: 107438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111678-1	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	107331
MBL 380-107331/22-A	Method Blank	Total/NA	Water	533	107331
LCS 380-107331/24-A	Lab Control Sample	Total/NA	Water	533	107331
MRL 380-107331/23-A	Lab Control Sample	Total/NA	Water	533	107331
380-111678-1 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	107331
380-111678-1 MSD	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	107331

QC Association Summary

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

Job ID: 380-111678-1
SDG: Weekly PFAS

LCMS

Analysis Batch: 107538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-111678-2	KA'AMILO WELLS	Total/NA	Water	533	107401
380-111678-3	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	107401
380-111678-4	FB KA'AMILO WELLS	Total/NA	Water	533	107401
MBL 380-107401/20-A	Method Blank	Total/NA	Water	533	107401
LCS 380-107401/22-A	Lab Control Sample	Total/NA	Water	533	107401
MRL 380-107401/21-A	Lab Control Sample	Total/NA	Water	533	107401
380-111678-2 MS	KA'AMILO WELLS	Total/NA	Water	533	107401
380-111678-2 MSD	KA'AMILO WELLS	Total/NA	Water	533	107401

Lab Chronicle

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-1

Date Collected: 09/03/24 11:46

Matrix: Water

Date Received: 09/05/24 10:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107331	E9PK	EA POM	09/08/24 16:00
Total/NA	Analysis	533		1	107438	M7ML	EA POM	09/09/24 18:09
Total/NA	Prep	537.1 DW			107309	N8NE	EA POM	09/07/24 14:03
Total/NA	Analysis	537.1		1	107424	M7ML	EA POM	09/09/24 15:46

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-111678-2

Date Collected: 09/03/24 12:21

Matrix: Water

Date Received: 09/05/24 10:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107401	XTD8	EA POM	09/09/24 06:48
Total/NA	Analysis	533		1	107538	SZ9R	EA POM	09/10/24 06:43
Total/NA	Prep	537.1 DW			107309	N8NE	EA POM	09/07/24 14:03
Total/NA	Analysis	537.1		1	107424	M7ML	EA POM	09/09/24 15:56

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-111678-3

Date Collected: 09/03/24 11:46

Matrix: Water

Date Received: 09/05/24 10:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107401	XTD8	EA POM	09/09/24 06:48
Total/NA	Analysis	533		1	107538	SZ9R	EA POM	09/10/24 08:57
Total/NA	Prep	537.1 DW			107309	N8NE	EA POM	09/07/24 14:03
Total/NA	Analysis	537.1		1	107424	M7ML	EA POM	09/09/24 16:05

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-111678-4

Date Collected: 09/03/24 12:21

Matrix: Water

Date Received: 09/05/24 10:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107401	XTD8	EA POM	09/09/24 06:48
Total/NA	Analysis	533		1	107538	SZ9R	EA POM	09/10/24 09:06
Total/NA	Prep	537.1 DW			107309	N8NE	EA POM	09/07/24 14:03
Total/NA	Analysis	537.1		1	107424	M7ML	EA POM	09/09/24 16:25

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-111678-1
SDG: Weekly PFAS

Laboratory: Eurofins Eaton Analytical Pomona

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

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

- 1
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Method Summary

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

Job ID: 380-111678-1
SDG: Weekly PFAS

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

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

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

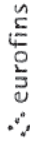
Job ID: 380-111678-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-111678-1	AIEA GULCH WELLS PUMP 2	Water	09/03/24 11:46	09/05/24 10:24
380-111678-2	KA'AMILO WELLS	Water	09/03/24 12:21	09/05/24 10:24
380-111678-3	FB AIEA GULCH WELLS PUMP 2	Water	09/03/24 11:46	09/05/24 10:24
380-111678-4	FB KA'AMILO WELLS	Water	09/03/24 12:21	09/05/24 10:24

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

Chain of Custody Record



Client Information		Lab PM Arada Rachelle	Carrier Tracking No(s) 380 27941 2757 2
Client Contact: Dr Ron Fenstermacher		E-Mail Rachelle.Arada@t.euronisus.com	Page Page 2 of 2
Company City & County of Honolulu		PWSID	Job #
Address 630 South Beretania Street, Chemistry Lab Honolulu		Analysis Requested	
City Honolulu		Total Number of Containers	
State Zip HI 96843		533 All Analytes	
Phone 808-748-5091 (tel)		537 1.0W_PRC 537 1 Full List	
Email fenstermacher@hbws.org		525 2.PRC (MOD) 525plus PLUS TICs	
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		8015B_DRO_LL_CS HNL Ranges C10-C24/C24-C36/C8	
Site		8015B_GRO_LL (MOD) GRO	
Due Date Requested		SUBCONTRACT 625 PAH Physis LL (EAL) + TICs	
TAT Requested (days)		Perform MS/MSD (Yes or No)	
Compliance Project: <input type="checkbox"/> No		Field Filtered Sample (Yes or No)	
PO # C20525101 exp 05312023		R A Q	
WO #		Y I	
Project # 38001111		3 3	
SSOW#		3 3	
Sample Date		Special Instructions/Note	
Sample Time		chlorinated	
Sample Type (C=comp, G=grab)		chlorinated	
Preservation Code			
Matrix (Water, Seawater, Groundwater, etc.)			
Sample Date			
Sample Time			
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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-111678-1
SDG Number: Weekly PFAS

Login Number: 111678
List Number: 1
Creator: Edrosa, Rey

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

