

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-68496-1

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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Definitions/Glossary

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

Job ID: 380-68496-1

Qualifiers

LCMS

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 380-68496-1

Job ID: 380-68496-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-68496-1

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

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

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

Receipt

The samples were received on 10/25/2023 9:57 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.7°C and 5.2°C

Receipt Exceptions

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

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: 380-68496-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)
PWSID Number: HI0000331

Lab Sample ID: 380-68496-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
PWSID Number: HI0000331

Lab Sample ID: 380-68496-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2
PWSID Number: HI0000331

Lab Sample ID: 380-68496-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1
PWSID Number: HI0000331

Lab Sample ID: 380-68496-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.3		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-68496-5

No Detections.

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-68496-6

No Detections.

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2

Lab Sample ID: 380-68496-7

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1

Lab Sample ID: 380-68496-8

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-68496-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-68496-1

Date Collected: 10/23/23 09:58

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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		11/16/23 18:38	11/19/23 08:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	72		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C6 PFDA	73		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C5 PFHxA	75		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C4 PFHpA	81		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C8 PFOA	74		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C9 PFNA	69		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C7 PFUnA	72		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C2 PFDoA	75		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C4 PFBA	85		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C5 PFPeA	93		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C3 PFBS	101		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C3 PFHxS	110		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C8 PFOS	110		50 - 200	11/16/23 18:38	11/19/23 08:26	1

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Client Sample Results

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

Job ID: 380-68496-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-68496-1

Date Collected: 10/23/23 09:58

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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	120		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C2-6:2-FTS	129		50 - 200	11/16/23 18:38	11/19/23 08:26	1
13C2-8:2-FTS	114		50 - 200	11/16/23 18:38	11/19/23 08:26	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		10/26/23 12:52	10/28/23 02:19	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130			10/26/23 12:52	10/28/23 02:19	1
13C2 PFHxA	104		70 - 130			10/26/23 12:52	10/28/23 02:19	1
13C2 PFDA	100		70 - 130			10/26/23 12:52	10/28/23 02:19	1
13C3-GenX	105		70 - 130			10/26/23 12:52	10/28/23 02:19	1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-68496-2

Date Collected: 10/23/23 11:05

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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		11/16/23 18:38	11/19/23 08:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1

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Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-68496-2

Date Collected: 10/23/23 11:05

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:36	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C6 PFDA	89		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C5 PFHxA	84		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C4 PFHpA	89		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C8 PFOA	86		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C9 PFNA	85		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C7 PFUnA	81		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C2 PFDoA	80		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C4 PFBA	92		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C5 PFPeA	91		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C3 PFBS	102		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C3 PFHxS	108		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C8 PFOS	107		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C2-4:2-FTS	123		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C2-6:2-FTS	126		50 - 200			11/16/23 18:38	11/19/23 08:36	1
13C2-8:2-FTS	113		50 - 200			11/16/23 18:38	11/19/23 08:36	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		10/26/23 12:52	10/28/23 02:29	1

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Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-68496-2

Date Collected: 10/23/23 11:05

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	100		70 - 130			10/26/23 12:52	10/28/23 02:29	1
13C2 PFHxA	98		70 - 130			10/26/23 12:52	10/28/23 02:29	1
13C2 PFDA	102		70 - 130			10/26/23 12:52	10/28/23 02:29	1
13C3-GenX	95		70 - 130			10/26/23 12:52	10/28/23 02:29	1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400) P2**

Lab Sample ID: 380-68496-3

Date Collected: 10/23/23 11:38

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400) P2**

Lab Sample ID: 380-68496-3

Date Collected: 10/23/23 11:38

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:45	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	80		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C6 PFDA	94		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C5 PFHxA	84		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C4 PFHpA	90		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C8 PFOA	88		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C9 PFNA	87		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C7 PFUnA	83		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C2 PFDoA	83		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C4 PFBA	94		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C5 PFPeA	94		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C3 PFBS	98		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C3 PFHxS	106		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C8 PFOS	106		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C2-4:2-FTS	117		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C2-6:2-FTS	123		50 - 200			11/16/23 18:38	11/19/23 08:45	1
13C2-8:2-FTS	112		50 - 200			11/16/23 18:38	11/19/23 08:45	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		10/26/23 12:52	10/28/23 02:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1

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Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400) P2**

Lab Sample ID: 380-68496-3

Date Collected: 10/23/23 11:38

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	100		70 - 130			10/26/23 12:52	10/28/23 02:38	1
13C2 PFHxA	97		70 - 130			10/26/23 12:52	10/28/23 02:38	1
13C2 PFDA	102		70 - 130			10/26/23 12:52	10/28/23 02:38	1
13C3-GenX	95		70 - 130			10/26/23 12:52	10/28/23 02:38	1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065) P1**

Lab Sample ID: 380-68496-4

Date Collected: 10/23/23 10:36

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluorooctanoic acid (PFOA)	2.3		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065) P1**

Lab Sample ID: 380-68496-4

Date Collected: 10/23/23 10:36

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluoropentanoic acid (PFPeA)	2.3		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/16/23 18:38	11/19/23 08:55	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C6 PFDA	90		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C5 PFHxA	84		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C4 PFHpA	85		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C8 PFOA	79		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C9 PFNA	85		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C7 PFUnA	81		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C2 PFDoA	77		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C4 PFBA	93		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C5 PFPeA	95		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C3 PFBS	97		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C3 PFHxS	102		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C8 PFOS	99		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C2-4:2-FTS	112		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C2-6:2-FTS	121		50 - 200	11/16/23 18:38	11/19/23 08:55	1
13C2-8:2-FTS	103		50 - 200	11/16/23 18:38	11/19/23 08:55	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		10/26/23 12:52	10/28/23 02:48	1
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065) P1**

Lab Sample ID: 380-68496-4

Date Collected: 10/23/23 10:36

Matrix: Drinking Water

Date Received: 10/25/23 09:57

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	98		70 - 130			10/26/23 12:52	10/28/23 02:48	1
13C2 PFHxA	73		70 - 130			10/26/23 12:52	10/28/23 02:48	1
13C2 PFDA	98		70 - 130			10/26/23 12:52	10/28/23 02:48	1
13C3-GenX	88		70 - 130			10/26/23 12:52	10/28/23 02:48	1

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-68496-5

Date Collected: 10/23/23 09:58

Matrix: Water

Date Received: 10/25/23 09:57

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		11/12/23 13:15	11/14/23 15:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-68496-1

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-68496-5

Date Collected: 10/23/23 09:58

Matrix: Water

Date Received: 10/25/23 09:57

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		11/12/23 13:15	11/14/23 15:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C6 PFDA	105		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C5 PFHxA	103		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C4 PFHpA	101		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C8 PFOA	103		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C9 PFNA	107		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C7 PFUnA	105		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C2 PFDoA	101		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C4 PFBA	105		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C5 PFPeA	100		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C3 PFBS	105		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C3 PFHxS	105		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C8 PFOS	107		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C2-4:2-FTS	112		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C2-6:2-FTS	107		50 - 200	11/12/23 13:15	11/14/23 15:26	1
13C2-8:2-FTS	124		50 - 200	11/12/23 13:15	11/14/23 15:26	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		10/26/23 12:52	10/28/23 02:57	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-68496-1

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-68496-5

Date Collected: 10/23/23 09:58

Matrix: Water

Date Received: 10/25/23 09:57

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		10/26/23 12:52	10/28/23 02:57	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 02:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	97		70 - 130			10/26/23 12:52	10/28/23 02:57	1
13C2 PFHxA	100		70 - 130			10/26/23 12:52	10/28/23 02:57	1
13C2 PFDA	97		70 - 130			10/26/23 12:52	10/28/23 02:57	1
13C3-GenX	89		70 - 130			10/26/23 12:52	10/28/23 02:57	1

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-68496-6

Date Collected: 10/23/23 11:05

Matrix: Water

Date Received: 10/25/23 09:57

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		11/12/23 13:15	11/14/23 15:36	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-68496-6

Date Collected: 10/23/23 11:05

Matrix: Water

Date Received: 10/25/23 09:57

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:36	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C6 PFDA	101		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C5 PFHxA	91		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C4 PFHpA	95		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C8 PFOA	100		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C9 PFNA	101		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C7 PFUnA	96		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C2 PFDoA	94		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C4 PFBA	103		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C5 PFPeA	106		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C3 PFBS	99		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C3 PFHxS	104		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C8 PFOS	101		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C2-4:2-FTS	106		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C2-6:2-FTS	106		50 - 200			11/12/23 13:15	11/14/23 15:36	1
13C2-8:2-FTS	118		50 - 200			11/12/23 13:15	11/14/23 15:36	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		10/26/23 12:52	10/28/23 03:07	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:07	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-68496-6

Date Collected: 10/23/23 11:05

Matrix: Water

Date Received: 10/25/23 09:57

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	95		70 - 130	10/26/23 12:52	10/28/23 03:07	1
13C2 PFHxA	81		70 - 130	10/26/23 12:52	10/28/23 03:07	1
13C2 PFDA	97		70 - 130	10/26/23 12:52	10/28/23 03:07	1
13C3-GenX	72		70 - 130	10/26/23 12:52	10/28/23 03:07	1

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400) P2**

Lab Sample ID: 380-68496-7

Date Collected: 10/23/23 11:38

Matrix: Water

Date Received: 10/25/23 09:57

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:45	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
13C3 HFPO-DA	95		50 - 200	11/12/23 13:15	11/14/23 15:45	1		

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400) P2**

Lab Sample ID: 380-68496-7

Date Collected: 10/23/23 11:38

Matrix: Water

Date Received: 10/25/23 09:57

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	97		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C5 PFHxA	89		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C4 PFHpA	98		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C8 PFOA	99		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C9 PFNA	103		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C7 PFUnA	99		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C2 PFDoA	100		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C4 PFBA	98		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C5 PFPeA	100		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C3 PFBS	104		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C3 PFHxS	103		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C8 PFOS	105		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C2-4:2-FTS	111		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C2-6:2-FTS	101		50 - 200	11/12/23 13:15	11/14/23 15:45	1
13C2-8:2-FTS	113		50 - 200	11/12/23 13:15	11/14/23 15:45	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		10/26/23 12:52	10/28/23 03:16	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/26/23 12:52	10/28/23 03:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	91		70 - 130	10/26/23 12:52	10/28/23 03:16	1
13C2 PFHxA	93		70 - 130	10/26/23 12:52	10/28/23 03:16	1
13C2 PFDA	100		70 - 130	10/26/23 12:52	10/28/23 03:16	1
13C3-GenX	86		70 - 130	10/26/23 12:52	10/28/23 03:16	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065) P1**

Lab Sample ID: 380-68496-8

Date Collected: 10/23/23 10:36

Matrix: Water

Date Received: 10/25/23 09:57

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/12/23 13:15	11/14/23 15:55	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	93		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C6 PFDA	104		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C5 PFHxA	99		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C4 PFHpA	98		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C8 PFOA	97		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C9 PFNA	101		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C7 PFUnA	105		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C2 PFDoA	102		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C4 PFBA	101		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C5 PFPeA	106		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C3 PFBS	103		50 - 200			11/12/23 13:15	11/14/23 15:55	1
13C3 PFHxS	105		50 - 200			11/12/23 13:15	11/14/23 15:55	1

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Client Sample Results

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

Job ID: 380-68496-1

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065) P1**

Lab Sample ID: 380-68496-8

Date Collected: 10/23/23 10:36

Matrix: Water

Date Received: 10/25/23 09:57

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	104		50 - 200	11/12/23 13:15	11/14/23 15:55	1
13C2-4:2-FTS	116		50 - 200	11/12/23 13:15	11/14/23 15:55	1
13C2-6:2-FTS	105		50 - 200	11/12/23 13:15	11/14/23 15:55	1
13C2-8:2-FTS	117		50 - 200	11/12/23 13:15	11/14/23 15:55	1

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/30/23 13:43	10/31/23 17:47	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
d5-NEtFOSAA	116		70 - 130	10/30/23 13:43	10/31/23 17:47	1
13C2 PFHxA	112		70 - 130	10/30/23 13:43	10/31/23 17:47	1
13C2 PFDA	117		70 - 130	10/30/23 13:43	10/31/23 17:47	1
13C3-GenX	110		70 - 130	10/30/23 13:43	10/31/23 17:47	1

Surrogate Summary

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

Job ID: 380-68496-1

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

Matrix: Drinking 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)
380-68496-1	MOANALUA WELLS (331-223-T	104	104	100	105
380-68496-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	100	98	102	95
380-68496-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2	100	97	102	95
380-68496-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1	98	73	98	88

Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX

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)
380-68488-A-1-B MS	Matrix Spike	90	98	97	97
380-68488-A-1-C MSD	Matrix Spike Duplicate	100	104	99	98
380-68496-5	FB: MOANALUA WELLS (331-223-TP202)	97	100	97	89
380-68496-6	FB: AIEA GULCH WELLS PUMF 2 (331-202-TP072)	95	81	97	72
380-68496-7	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2	91	93	100	86
380-68496-8	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1	116	112	117	110
380-68525-Z-1-A MSD	Matrix Spike Duplicate	104	110	113	111
380-68525-AA-1-A MS	Matrix Spike	106	111	117	111
LCS 380-61199/25-A	Lab Control Sample	98	103	98	88
LCS 380-61658/25-A	Lab Control Sample	109	117	114	116
LCSD 380-61199/26-A	Lab Control Sample Dup	99	100	97	87
LCSD 380-61658/26-A	Lab Control Sample Dup	104	111	111	112
MBL 380-61199/23-A	Method Blank	101	112	103	96
MBL 380-61658/23-A	Method Blank	110	106	110	105
MRL 380-61199/24-A	Lab Control Sample	98	106	103	86
MRL 380-61658/24-A	Lab Control Sample	111	109	111	103

Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX

Isotope Dilution Summary

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

Job ID: 380-68496-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-68496-1	MOANALUA WELLS (331-223-T	72	73	75	81	74	69	72	75
380-68496-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	82	89	84	89	86	85	81	80
380-68496-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2	80	94	84	90	88	87	83	83
380-68496-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1	76	90	84	85	79	85	81	77

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-68496-1	MOANALUA WELLS (331-223-T	85	93	101	110	110	120	129	114
380-68496-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	92	91	102	108	107	123	126	113
380-68496-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2	94	94	98	106	106	117	123	112
380-68496-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1	93	95	97	102	99	112	121	103

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-68214-E-1-A MS	Matrix Spike	75	91	81	89	86	87	86	85
380-68214-F-1-A MSD	Matrix Spike Duplicate	77	96	84	90	92	89	95	93
380-68496-5	FB: MOANALUA WELLS (331-223-TP202)	97	105	103	101	103	107	105	101
380-68496-6	FB: AIEA GULCH WELLS PUMF 2 (331-202-TP072)	94	101	91	95	100	101	96	94
380-68496-7	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2	95	97	89	98	99	103	99	100
380-68496-8	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1	93	104	99	98	97	101	105	102
380-68536-B-3-A MS	Matrix Spike	82	101	91	97	95	99	102	97

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Isotope Dilution Summary

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

Job ID: 380-68496-1

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

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)
380-68536-C-3-A MSD	Matrix Spike Duplicate	96	103	97	98	99	102	102	97
LCS 380-63288/21-A	Lab Control Sample	115	105	106	101	102	106	108	101
LCS 380-64126/21-A	Lab Control Sample	110	113	110	115	108	103	113	109
LCSD 380-63288/22-A	Lab Control Sample Dup	112	104	105	102	105	111	109	102
LCSD 380-64126/22-A	Lab Control Sample Dup	100	108	102	106	108	101	102	104
MBL 380-63288/19-A	Method Blank	84	87	88	83	87	92	89	83
MBL 380-64126/19-A	Method Blank	76	84	86	95	90	84	85	86
MRL 380-63288/20-A	Lab Control Sample	83	101	98	97	99	102	100	93
MRL 380-64126/20-A	Lab Control Sample	95	106	105	116	109	101	99	102

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-68214-E-1-A MS	Matrix Spike	85	83	98	108	108	112	111	105
380-68214-F-1-A MSD	Matrix Spike Duplicate	84	90	100	107	108	117	118	109
380-68496-5	FB: MOANALUA WELLS (331-223-TP202)	105	100	105	105	107	112	107	124
380-68496-6	FB: AIEA GULCH WELLS PUMF 2 (331-202-TP072)	103	106	99	104	101	106	106	118
380-68496-7	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2	98	100	104	103	105	111	101	113
380-68496-8	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1	101	106	103	105	104	116	105	117
380-68536-B-3-A MS	Matrix Spike	100	112	102	105	103	113	103	126
380-68536-C-3-A MSD	Matrix Spike Duplicate	102	109	103	104	105	108	98	122
LCS 380-63288/21-A	Lab Control Sample	105	104	99	100	102	99	93	105
LCS 380-64126/21-A	Lab Control Sample	107	112	101	104	103	107	105	105
LCSD 380-63288/22-A	Lab Control Sample Dup	105	107	97	97	103	100	92	100
LCSD 380-64126/22-A	Lab Control Sample Dup	105	105	99	109	111	112	118	105
MBL 380-63288/19-A	Method Blank	91	95	89	86	88	97	90	90
MBL 380-64126/19-A	Method Blank	88	90	92	94	95	90	93	86
MRL 380-63288/20-A	Lab Control Sample	97	97	97	96	97	109	97	107
MRL 380-64126/20-A	Lab Control Sample	104	106	102	108	104	110	106	95

Surrogate Legend

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

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MBL 380-63288/19-A
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63288

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		11/12/23 13:15	11/14/23 12:09	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	84		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C6 PFDA	87		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C5 PFHxA	88		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C4 PFHpA	83		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C8 PFOA	87		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C9 PFNA	92		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C7 PFUnA	89		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C2 PFDoA	83		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C4 PFBA	91		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C5 PFPeA	95		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C3 PFBS	89		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C3 PFHxS	86		50 - 200	11/12/23 13:15	11/14/23 12:09	1

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MBL 380-63288/19-A
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63288

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	88		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C2-4:2-FTS	97		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C2-6:2-FTS	90		50 - 200	11/12/23 13:15	11/14/23 12:09	1
13C2-8:2-FTS	90		50 - 200	11/12/23 13:15	11/14/23 12:09	1

Lab Sample ID: LCS 380-63288/21-A
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	119		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	120		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	125		ng/L		104	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	119		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	123		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	120	127		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	120	127		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	128		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	121		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	120	118		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	120	123		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	123		ng/L		103	70 - 130
Perfluorooctanoic acid (PFOA)	120	127		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	123		ng/L		102	70 - 130
Perfluorobutanoic acid (PFBA)	120	126		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	122		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	126		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	132		ng/L		110	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	139		ng/L		116	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	125		ng/L		104	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	125		ng/L		104	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	123		ng/L		103	70 - 130
Perfluoropentanoic acid (PFPeA)	120	123		ng/L		102	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	123		ng/L		102	70 - 130

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: LCS 380-63288/21-A
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	120		ng/L		100	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	115		50 - 200				
13C6 PFDA	105		50 - 200				
13C5 PFHxA	106		50 - 200				
13C4 PFHpA	101		50 - 200				
13C8 PFOA	102		50 - 200				
13C9 PFNA	106		50 - 200				
13C7 PFUnA	108		50 - 200				
13C2 PFDoA	101		50 - 200				
13C4 PFBA	105		50 - 200				
13C5 PFPeA	104		50 - 200				
13C3 PFBS	99		50 - 200				
13C3 PFHxS	100		50 - 200				
13C8 PFOS	102		50 - 200				
13C2-4:2-FTS	99		50 - 200				
13C2-6:2-FTS	93		50 - 200				
13C2-8:2-FTS	105		50 - 200				

Lab Sample ID: LCSD 380-63288/22-A
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63288

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	114		ng/L		95	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	119		ng/L		99	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	125		ng/L		104	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	121		ng/L		101	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	120	125		ng/L		104	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	120	125		ng/L		104	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	120	127		ng/L		105	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	120	124		ng/L		103	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	120	121		ng/L		101	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	120	121		ng/L		101	70 - 130	2	30
Perfluorononanoic acid (PFNA)	120	120		ng/L		100	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	120	121		ng/L		101	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	120	122		ng/L		102	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	120	122		ng/L		102	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	120	126		ng/L		105	70 - 130	0	30

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: LCSD 380-63288/22-A
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63288

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	124		ng/L		103	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	120		ng/L		100	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	131		ng/L		109	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	127		ng/L		106	70 - 130	9	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	123		ng/L		102	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	121		ng/L		101	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	125		ng/L		105	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	120	118		ng/L		98	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	120	118		ng/L		98	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	120	125		ng/L		104	70 - 130	4	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C3 HFPO-DA	112		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	111		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	102		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	107		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	97		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	100		50 - 200
13C2-6:2-FTS	92		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: MRL 380-63288/20-A
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63288

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.13	J	ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.15	J	ng/L		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.22	J	ng/L		111	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MRL 380-63288/20-A
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63288

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.39	J	ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.45	J	ng/L		122	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.33	J	ng/L		116	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.27	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.37	J	ng/L		118	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.28	J	ng/L		114	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.12	J	ng/L		106	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	83		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	100		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	97		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	96		50 - 200
13C8 PFOS	97		50 - 200

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MRL 380-63288/20-A
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63288

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	97		50 - 200
13C2-8:2-FTS	107		50 - 200

Lab Sample ID: 380-68536-B-3-A MS
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 63288

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	59.6		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	60.2		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	58.7		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	60.2		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	8.9		60.1	68.7		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.1	61.6		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	64.0		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	61.8		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	8.3		60.1	70.4		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	63.6		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.1	62.5		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	10		60.1	71.5		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	2.8		60.1	62.9		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	62.8		ng/L		104	70 - 130
Perfluorobutanoic acid (PFBA)	16		60.1	77.5		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	62.3		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	61.0		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	66.9		ng/L		111	70 - 130
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	54.8		ng/L		91	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.1	60.5		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	65.8		ng/L		109	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	56.9		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	60.8		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	64.1		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	60.1		ng/L		97	70 - 130

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QC Sample Results

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

Job ID: 380-68496-1

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

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	82		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	91		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	102		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	100		50 - 200
13C5 PFPeA	112		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	105		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	113		50 - 200
13C2-6:2-FTS	103		50 - 200
13C2-8:2-FTS	126		50 - 200

Lab Sample ID: 380-68536-C-3-A MSD
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 63288

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec	RPD	RPD
									Limits	RPD	Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	57.1		ng/L		95	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	59.0		ng/L		98	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	60.0		ng/L		100	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	59.1		ng/L		98	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	8.9		60.1	67.6		ng/L		98	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		60.1	63.3		ng/L		105	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	64.5		ng/L		107	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	64.7		ng/L		106	70 - 130	5	30
Perfluorohexanesulfonic acid (PFHxS)	8.3		60.1	68.2		ng/L		100	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	64.6		ng/L		105	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		60.1	63.9		ng/L		104	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	10		60.1	71.7		ng/L		102	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	2.8		60.1	65.1		ng/L		104	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	64.3		ng/L		107	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	16		60.1	80.1		ng/L		107	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	64.0		ng/L		106	70 - 130	3	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	66.7		ng/L		111	70 - 130	9	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	67.1		ng/L		112	70 - 130	0	30

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: 380-68536-C-3-A MSD
Matrix: Water
Analysis Batch: 63691

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 63288

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	61.6		ng/L		102	70 - 130	12	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.1	61.4		ng/L		102	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	66.0		ng/L		110	70 - 130	0	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	61.0		ng/L		101	70 - 130	7	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	66.1		ng/L		107	70 - 130	8	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	62.8		ng/L		104	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	62.6		ng/L		101	70 - 130	4	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	96		50 - 200
13C6 PFDA	103		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	102		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	102		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	108		50 - 200
13C2-6:2-FTS	98		50 - 200
13C2-8:2-FTS	122		50 - 200

Lab Sample ID: MBL 380-64126/19-A
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64126

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		11/16/23 18:38	11/19/23 06:31	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MBL 380-64126/19-A
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64126

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		11/16/23 18:38	11/19/23 06:31	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C6 PFDA	84		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C5 PFHxA	86		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C4 PFHpA	95		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C8 PFOA	90		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C9 PFNA	84		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C7 PFUnA	85		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C2 PFDoA	86		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C4 PFBA	88		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C5 PFPeA	90		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C3 PFBS	92		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C3 PFHxS	94		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C8 PFOS	95		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C2-4:2-FTS	90		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C2-6:2-FTS	93		50 - 200	11/16/23 18:38	11/19/23 06:31	1
13C2-8:2-FTS	86		50 - 200	11/16/23 18:38	11/19/23 06:31	1

Lab Sample ID: LCS 380-64126/21-A
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	120	123		ng/L		103	70 - 130

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: LCS 380-64126/21-A
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	114		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	109		ng/L		91	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	105		ng/L		87	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	120		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	120	114		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	120	119		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	112		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	115		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	120	115		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	120	122		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	115		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	120	122		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	114		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	116		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	127		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	131		ng/L		109	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	115		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	120		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	116		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	120	115		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	119		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	115		ng/L		96	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	110		50 - 200
13C6 PFDA	113		50 - 200
13C5 PFHxA	110		50 - 200
13C4 PFHpA	115		50 - 200
13C8 PFOA	108		50 - 200
13C9 PFNA	103		50 - 200
13C7 PFUnA	113		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	107		50 - 200

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: LCS 380-64126/21-A
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64126

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C5 PFPeA	112		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: LCSD 380-64126/22-A
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 64126

<i>Analyte</i>	<i>Spike Added</i>	<i>LCSD Result</i>	<i>LCSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	118		ng/L		98	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	108		ng/L		90	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	110		ng/L		92	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	119		ng/L		99	70 - 130	13	30
Perfluorobutanesulfonic acid (PFBS)	120	125		ng/L		104	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	120	109		ng/L		91	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	120	117		ng/L		97	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	120	115		ng/L		95	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	120	114		ng/L		95	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	120	119		ng/L		99	70 - 130	3	30
Perfluorononanoic acid (PFNA)	120	120		ng/L		100	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	120	110		ng/L		92	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	120	113		ng/L		94	70 - 130	7	30
Perfluoroundecanoic acid (PFUnA)	120	120		ng/L		100	70 - 130	5	30
Perfluorobutanoic acid (PFBA)	120	112		ng/L		93	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	118		ng/L		98	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	119		ng/L		99	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	124		ng/L		103	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	115		ng/L		96	70 - 130	12	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	122		ng/L		101	70 - 130	6	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	112		ng/L		93	70 - 130	7	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	115		ng/L		96	70 - 130	0	30

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: LCSD 380-64126/22-A
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 64126

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)	120	122		ng/L		101	70 - 130	6	30
Perfluoroheptanesulfonic acid (PFHpS)	120	115		ng/L		96	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	120	110		ng/L		92	70 - 130	4	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C3 HFPO-DA	100		50 - 200
13C6 PFDA	108		50 - 200
13C5 PFHxA	102		50 - 200
13C4 PFHpA	106		50 - 200
13C8 PFOA	108		50 - 200
13C9 PFNA	101		50 - 200
13C7 PFUnA	102		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	105		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	111		50 - 200
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	118		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: MRL 380-64126/20-A
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64126

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.32	J	ng/L		116	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.24	J	ng/L		112	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.93	J	ng/L		97	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.19	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.15	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.18	J	ng/L		109	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MRL 380-64126/20-A
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64126

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.02	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.43	J	ng/L		121	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.02	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.20	J	ng/L		110	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.31	J	ng/L		116	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.97	J	ng/L		98	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.07	J	ng/L		104	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.19	J	ng/L		110	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.91	J	ng/L		96	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	106		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	116		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	101		50 - 200
13C7 PFUnA	99		50 - 200
13C2 PFDoA	102		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	106		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	95		50 - 200

Lab Sample ID: 380-68214-E-1-A MS
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 64126

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	58.3		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	58.8		ng/L		98	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: 380-68214-E-1-A MS
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 64126

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	52.3		ng/L		87	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	56.6		ng/L		94	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.1	57.7		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.1	54.0		ng/L		90	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	61.3		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	55.4		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.1	55.6		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	57.3		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.1	56.4		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.1	55.1		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.1	57.0		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	58.8		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.1	58.0		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	60.7		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	55.4		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	60.0		ng/L		100	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	55.5		ng/L		92	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.1	57.7		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	56.3		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	51.5		ng/L		86	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	52.6		ng/L		88	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	56.9		ng/L		95	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	54.9		ng/L		91	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	75		50 - 200
13C6 PFDA	91		50 - 200
13C5 PFHxA	81		50 - 200
13C4 PFHpA	89		50 - 200
13C8 PFOA	86		50 - 200
13C9 PFNA	87		50 - 200
13C7 PFUnA	86		50 - 200
13C2 PFDoA	85		50 - 200
13C4 PFBA	85		50 - 200
13C5 PFPeA	83		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	108		50 - 200

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: 380-68214-E-1-A MS
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 64126

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	111		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: 380-68214-F-1-A MSD
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 64126

<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>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.0	62.4		ng/L		104	70 - 130	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.0	62.5		ng/L		104	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.0	54.7		ng/L		91	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.0	57.7		ng/L		96	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.0	64.0		ng/L		107	70 - 130	10	30
Perfluorodecanoic acid (PFDA)	<2.0		60.0	60.3		ng/L		100	70 - 130	11	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.0	62.1		ng/L		103	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.0	58.2		ng/L		97	70 - 130	5	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.0	60.5		ng/L		101	70 - 130	8	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.0	59.8		ng/L		100	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		60.0	61.9		ng/L		103	70 - 130	9	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.0	59.1		ng/L		99	70 - 130	7	30
Perfluorooctanoic acid (PFOA)	<2.0		60.0	61.5		ng/L		103	70 - 130	8	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.0	60.6		ng/L		101	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		60.0	61.0		ng/L		102	70 - 130	5	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.0	63.1		ng/L		105	70 - 130	4	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.0	59.9		ng/L		100	70 - 130	8	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.0	64.3		ng/L		107	70 - 130	7	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.0	51.8		ng/L		86	70 - 130	7	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.0	57.3		ng/L		96	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.0	58.9		ng/L		98	70 - 130	5	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.0	57.7		ng/L		96	70 - 130	11	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.0	59.3		ng/L		99	70 - 130	12	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.0	61.9		ng/L		103	70 - 130	8	30

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: 380-68214-F-1-A MSD
Matrix: Water
Analysis Batch: 64468

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 64126

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.0	58.8		ng/L		98	70 - 130	7	30
MSD MSD											
Isotope Dilution	%Recovery	Qualifier	Limits								
13C3 HFPO-DA	77		50 - 200								
13C6 PFDA	96		50 - 200								
13C5 PFHxA	84		50 - 200								
13C4 PFHpA	90		50 - 200								
13C8 PFOA	92		50 - 200								
13C9 PFNA	89		50 - 200								
13C7 PFUnA	95		50 - 200								
13C2 PFDoA	93		50 - 200								
13C4 PFBA	84		50 - 200								
13C5 PFPeA	90		50 - 200								
13C3 PFBS	100		50 - 200								
13C3 PFHxS	107		50 - 200								
13C8 PFOS	108		50 - 200								
13C2-4:2-FTS	117		50 - 200								
13C2-6:2-FTS	118		50 - 200								
13C2-8:2-FTS	109		50 - 200								

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

Lab Sample ID: MBL 380-61199/23-A
Matrix: Water
Analysis Batch: 61379

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 61199

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		10/26/23 12:52	10/27/23 23:07	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<0.58		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<0.42		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MBL 380-61199/23-A
Matrix: Water
Analysis Batch: 61379

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 61199

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/26/23 12:52	10/27/23 23:07	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	101		70 - 130	10/26/23 12:52	10/27/23 23:07	1
13C2 PFHxA	112		70 - 130	10/26/23 12:52	10/27/23 23:07	1
13C2 PFDA	103		70 - 130	10/26/23 12:52	10/27/23 23:07	1
13C3-GenX	96		70 - 130	10/26/23 12:52	10/27/23 23:07	1

Lab Sample ID: LCS 380-61199/25-A
Matrix: Water
Analysis Batch: 61379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61199

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	21.9		ng/L		88	70 - 130
Perfluorooctanesulfonic acid (PFOS)	23.2	24.8		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	26.6		ng/L		106	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	25.3		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	25.6		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	26.3		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	24.5		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	26.9		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	27.6		ng/L		110	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	22.9	24.3		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	22.2	24.1		ng/L		109	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	28.4		ng/L		113	70 - 130
Perfluorononanoic acid (PFNA)	25.1	29.3		ng/L		117	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	23.8		ng/L		95	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.1	25.9		ng/L		103	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	23.4	26.6		ng/L		113	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	23.7	24.6		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	23.7	27.1		ng/L		115	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	103		70 - 130
13C2 PFDA	98		70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: LCS 380-61199/25-A
Matrix: Water
Analysis Batch: 61379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61199

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
13C3-GenX	88		70 - 130

Lab Sample ID: LCSD 380-61199/26-A
Matrix: Water
Analysis Batch: 61379

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 61199

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	21.5		ng/L		86	70 - 130	2	30	
Perfluorooctanesulfonic acid (PFOS)	23.2	25.1		ng/L		108	70 - 130	1	30	
Perfluoroundecanoic acid (PFUnA)	25.1	26.9		ng/L		108	70 - 130	1	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	25.6		ng/L		102	70 - 130	1	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	27.4		ng/L		109	70 - 130	7	30	
Perfluorohexanoic acid (PFHxA)	25.1	25.7		ng/L		103	70 - 130	2	30	
Perfluorododecanoic acid (PFDoA)	25.1	24.7		ng/L		99	70 - 130	1	30	
Perfluorooctanoic acid (PFOA)	25.1	26.7		ng/L		107	70 - 130	1	30	
Perfluorodecanoic acid (PFDA)	25.1	26.6		ng/L		106	70 - 130	4	30	
Perfluorohexanesulfonic acid (PFHxS)	22.9	25.1		ng/L		110	70 - 130	3	30	
Perfluorobutanesulfonic acid (PFBS)	22.2	23.5		ng/L		106	70 - 130	3	30	
Perfluoroheptanoic acid (PFHpA)	25.1	27.9		ng/L		112	70 - 130	2	30	
Perfluorononanoic acid (PFNA)	25.1	28.6		ng/L		114	70 - 130	2	30	
Perfluorotetradecanoic acid (PFTA)	25.1	24.0		ng/L		96	70 - 130	1	30	
Perfluorotridecanoic acid (PFTrDA)	25.1	27.0		ng/L		108	70 - 130	4	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	23.4	27.2		ng/L		116	70 - 130	2	30	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	23.7	24.7		ng/L		104	70 - 130	0	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	23.7	25.6		ng/L		108	70 - 130	6	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	99		70 - 130
13C2 PFHxA	100		70 - 130
13C2 PFDA	97		70 - 130
13C3-GenX	87		70 - 130

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MRL 380-61199/24-A
Matrix: Water
Analysis Batch: 61379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61199

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.91	J	ng/L		96	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.85	2.14	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.37	J	ng/L		119	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.19	J	ng/L		109	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.27	J	ng/L		114	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.19	J	ng/L		110	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.51	J	ng/L		125	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.50	J	ng/L		125	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.08	J	ng/L		114	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	2.10	J	ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.67	J	ng/L		134	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.55	J	ng/L		128	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.17	J	ng/L		109	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.34	J	ng/L		117	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.26	J	ng/L		121	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.07	J	ng/L		109	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.36	J	ng/L		125	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	106		70 - 130
13C2 PFDA	103		70 - 130
13C3-GenX	86		70 - 130

Lab Sample ID: 380-68488-A-1-B MS
Matrix: Water
Analysis Batch: 61379

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 61199

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	43.0		ng/L		86	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		46.5	48.2		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	51.5		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	47.8		ng/L		95	70 - 130

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: 380-68488-A-1-B MS
Matrix: Water
Analysis Batch: 61379

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 61199

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	48.1		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	50.8		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	47.0		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	52.0		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	51.7		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		45.8	48.5		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		44.4	49.2		ng/L		109	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	48.5		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	53.8		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	42.9		ng/L		85	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	49.0		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		46.9	50.6		ng/L		108	70 - 130
11-Chloroeicosasfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		47.4	50.3		ng/L		106	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		47.4	47.5		ng/L		100	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
d5-NEtFOSAA	90		70 - 130
13C2 PFHxA	98		70 - 130
13C2 PFDA	97		70 - 130
13C3-GenX	97		70 - 130

Lab Sample ID: 380-68488-A-1-C MSD
Matrix: Water
Analysis Batch: 61379

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 61199

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	42.6		ng/L		85	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		46.5	50.3		ng/L		108	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	51.7		ng/L		103	70 - 130	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	50.6		ng/L		101	70 - 130	6	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	50.8		ng/L		101	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	51.8		ng/L		101	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	48.6		ng/L		97	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	54.3		ng/L		106	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	52.6		ng/L		105	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: 380-68488-A-1-C MSD

Matrix: Water

Analysis Batch: 61379

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 61199

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		45.8	51.7		ng/L		109	70 - 130	6	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		44.4	48.8		ng/L		108	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	52.0		ng/L		103	70 - 130	7	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	54.8		ng/L		109	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	45.3		ng/L		90	70 - 130	5	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		50.2	50.6		ng/L		101	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		46.9	51.9		ng/L		111	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		47.4	49.5		ng/L		104	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		47.4	49.0		ng/L		103	70 - 130	3	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
d5-NEtFOSAA	100		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	99		70 - 130
13C3-GenX	98		70 - 130

Lab Sample ID: MBL 380-61658/23-A

Matrix: Water

Analysis Batch: 61833

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 61658

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		10/30/23 13:43	10/31/23 15:00	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
Perfluorotridecanoic acid (PFTTrDA)	<0.36		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MBL 380-61658/23-A
Matrix: Water
Analysis Batch: 61833

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 61658

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/30/23 13:43	10/31/23 15:00	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	110		70 - 130	10/30/23 13:43	10/31/23 15:00	1
13C2 PFHxA	106		70 - 130	10/30/23 13:43	10/31/23 15:00	1
13C2 PFDA	110		70 - 130	10/30/23 13:43	10/31/23 15:00	1
13C3-GenX	105		70 - 130	10/30/23 13:43	10/31/23 15:00	1

Lab Sample ID: LCS 380-61658/25-A
Matrix: Water
Analysis Batch: 61833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61658

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	42.2		ng/L		84	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.4	46.4		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	43.6		ng/L		87	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	46.6		ng/L		93	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	46.6		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	45.0		ng/L		90	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	43.9		ng/L		88	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	48.7		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	47.4		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.7	45.0		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.3	42.0		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	47.8		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	50.1	48.1		ng/L		96	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	42.9		ng/L		86	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	50.1	43.6		ng/L		87	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	45.1		ng/L		96	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	42.4		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	43.0		ng/L		91	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	109		70 - 130
13C2 PFHxA	117		70 - 130
13C2 PFDA	114		70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: LCS 380-61658/25-A
Matrix: Water
Analysis Batch: 61833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61658

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
13C3-GenX	116		70 - 130

Lab Sample ID: LCSD 380-61658/26-A
Matrix: Water
Analysis Batch: 61833

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 61658

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	49.9		ng/L		100	70 - 130	17	30	
Perfluorooctanesulfonic acid (PFOS)	46.4	49.1		ng/L		106	70 - 130	6	30	
Perfluoroundecanoic acid (PFUnA)	50.1	49.8		ng/L		99	70 - 130	13	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	50.0		ng/L		100	70 - 130	7	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	50.4		ng/L		101	70 - 130	8	30	
Perfluorohexanoic acid (PFHxA)	50.1	53.7		ng/L		107	70 - 130	17	30	
Perfluorododecanoic acid (PFDoA)	50.1	49.7		ng/L		99	70 - 130	13	30	
Perfluorooctanoic acid (PFOA)	50.1	53.9		ng/L		108	70 - 130	10	30	
Perfluorodecanoic acid (PFDA)	50.1	52.7		ng/L		105	70 - 130	11	30	
Perfluorohexanesulfonic acid (PFHxS)	45.7	49.8		ng/L		109	70 - 130	10	30	
Perfluorobutanesulfonic acid (PFBS)	44.3	44.4		ng/L		100	70 - 130	6	30	
Perfluoroheptanoic acid (PFHpA)	50.1	52.8		ng/L		105	70 - 130	10	30	
Perfluorononanoic acid (PFNA)	50.1	52.1		ng/L		104	70 - 130	8	30	
Perfluorotetradecanoic acid (PFTA)	50.1	47.2		ng/L		94	70 - 130	9	30	
Perfluorotridecanoic acid (PFTrDA)	50.1	51.9		ng/L		104	70 - 130	17	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	46.8	51.3		ng/L		110	70 - 130	13	30	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	48.9		ng/L		103	70 - 130	14	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	49.4		ng/L		104	70 - 130	14	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	104		70 - 130
13C2 PFHxA	111		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	112		70 - 130

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: MRL 380-61658/24-A
Matrix: Water
Analysis Batch: 61833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61658

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.87	J	ng/L		93	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.10	J	ng/L		113	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.11	J	ng/L		105	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.29	J	ng/L		115	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.14	J	ng/L		117	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.90	J	ng/L		107	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.32	J	ng/L		116	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.13	J	ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.10	J	ng/L		112	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.02	J	ng/L		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.14	J	ng/L		113	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	111		70 - 130
13C2 PFHxA	109		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	103		70 - 130

Lab Sample ID: 380-68525-Z-1-A MSD
Matrix: Water
Analysis Batch: 61833

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 61658

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	23.3		ng/L		93	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	3.2		23.2	27.8		ng/L		106	70 - 130	10	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	25.5		ng/L		102	70 - 130	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	26.6		ng/L		106	70 - 130	2	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: 380-68525-Z-1-A MSD

Matrix: Water

Analysis Batch: 61833

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 61658

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	26.8		ng/L		107	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	27.7		ng/L		107	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.1		ng/L		104	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	29.3		ng/L		110	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	26.6		ng/L		106	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	4.3		22.9	28.8		ng/L		107	70 - 130	8	30
Perfluorobutanesulfonic acid (PFBS)	4.6		22.2	27.6		ng/L		103	70 - 130	10	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	28.1		ng/L		109	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	28.8		ng/L		115	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	26.2		ng/L		104	70 - 130	3	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.1	26.2		ng/L		104	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		23.5	24.9		ng/L		106	70 - 130	6	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid(11Cl-PF3OUdS)	<2.0		23.7	23.0		ng/L		97	70 - 130	9	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		23.7	25.5		ng/L		108	70 - 130	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
d5-NEtFOSAA	104		70 - 130
13C2 PFHxA	110		70 - 130
13C2 PFDA	113		70 - 130
13C3-GenX	111		70 - 130

Lab Sample ID: 380-68525-AA-1-A MS

Matrix: Water

Analysis Batch: 61833

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 61658

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	23.9		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.2		23.2	30.7		ng/L		118	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.8		ng/L		107	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	27.2		ng/L		108	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	27.8		ng/L		111	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	28.0		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.7		ng/L		106	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	29.6		ng/L		111	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.5		ng/L		110	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-68496-1

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

Lab Sample ID: 380-68525-AA-1-A MS

Matrix: Water

Analysis Batch: 61833

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 61658

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
Perfluorohexanesulfonic acid (PFHxS)	4.3		22.9	31.0		ng/L		116	70 - 130
Perfluorobutanesulfonic acid (PFBS)	4.6		22.2	30.4		ng/L		116	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	28.2		ng/L		110	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	28.2		ng/L		112	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	27.0		ng/L		108	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.1	26.7		ng/L		106	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		23.5	26.5		ng/L		113	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		23.7	25.2		ng/L		106	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		23.7	26.0		ng/L		110	70 - 130
		MS		MS					
Surrogate	%Recovery	Qualifier	Limits						
d5-NEtFOSAA	106		70 - 130						
13C2 PFHxA	111		70 - 130						
13C2 PFDA	117		70 - 130						
13C3-GenX	111		70 - 130						

QC Association Summary

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

Job ID: 380-68496-1

LCMS

Prep Batch: 61199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68496-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
380-68496-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
380-68496-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	537.1 DW	
380-68496-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	
380-68496-5	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	537.1 DW	
380-68496-6	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	537.1 DW	
380-68496-7	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1 DW	
MBL 380-61199/23-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-61199/25-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-61199/26-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-61199/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-68488-A-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-68488-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 61379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68496-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1	61199
380-68496-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	61199
380-68496-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	537.1	61199
380-68496-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	61199
380-68496-5	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	537.1	61199
380-68496-6	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	537.1	61199
380-68496-7	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1	61199
MBL 380-61199/23-A	Method Blank	Total/NA	Water	537.1	61199
LCS 380-61199/25-A	Lab Control Sample	Total/NA	Water	537.1	61199
LCSD 380-61199/26-A	Lab Control Sample Dup	Total/NA	Water	537.1	61199
MRL 380-61199/24-A	Lab Control Sample	Total/NA	Water	537.1	61199
380-68488-A-1-B MS	Matrix Spike	Total/NA	Water	537.1	61199
380-68488-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	61199

Prep Batch: 61658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68496-8	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	537.1 DW	
MBL 380-61658/23-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-61658/25-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-61658/26-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-61658/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-68525-Z-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	
380-68525-AA-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	

Analysis Batch: 61833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68496-8	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	537.1	61658
MBL 380-61658/23-A	Method Blank	Total/NA	Water	537.1	61658
LCS 380-61658/25-A	Lab Control Sample	Total/NA	Water	537.1	61658
LCSD 380-61658/26-A	Lab Control Sample Dup	Total/NA	Water	537.1	61658
MRL 380-61658/24-A	Lab Control Sample	Total/NA	Water	537.1	61658
380-68525-Z-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	61658
380-68525-AA-1-A MS	Matrix Spike	Total/NA	Water	537.1	61658

QC Association Summary

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

Job ID: 380-68496-1

LCMS

Prep Batch: 63288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68496-5	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	533	
380-68496-6	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	533	
380-68496-7	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	533	
380-68496-8	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	533	
MBL 380-63288/19-A	Method Blank	Total/NA	Water	533	
LCS 380-63288/21-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-63288/22-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-63288/20-A	Lab Control Sample	Total/NA	Water	533	
380-68536-B-3-A MS	Matrix Spike	Total/NA	Water	533	
380-68536-C-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 63691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68496-5	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	533	63288
380-68496-6	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	533	63288
380-68496-7	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	533	63288
380-68496-8	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	533	63288
MBL 380-63288/19-A	Method Blank	Total/NA	Water	533	63288
LCS 380-63288/21-A	Lab Control Sample	Total/NA	Water	533	63288
LCSD 380-63288/22-A	Lab Control Sample Dup	Total/NA	Water	533	63288
MRL 380-63288/20-A	Lab Control Sample	Total/NA	Water	533	63288
380-68536-B-3-A MS	Matrix Spike	Total/NA	Water	533	63288
380-68536-C-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	63288

Prep Batch: 64126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68496-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	
380-68496-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	
380-68496-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	533	
380-68496-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	
MBL 380-64126/19-A	Method Blank	Total/NA	Water	533	
LCS 380-64126/21-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-64126/22-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-64126/20-A	Lab Control Sample	Total/NA	Water	533	
380-68214-E-1-A MS	Matrix Spike	Total/NA	Water	533	
380-68214-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 64468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68496-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	64126
380-68496-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	64126
380-68496-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	533	64126
380-68496-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	64126
MBL 380-64126/19-A	Method Blank	Total/NA	Water	533	64126
LCS 380-64126/21-A	Lab Control Sample	Total/NA	Water	533	64126
LCSD 380-64126/22-A	Lab Control Sample Dup	Total/NA	Water	533	64126
MRL 380-64126/20-A	Lab Control Sample	Total/NA	Water	533	64126
380-68214-E-1-A MS	Matrix Spike	Total/NA	Water	533	64126
380-68214-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	64126

Lab Chronicle

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

Job ID: 380-68496-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-68496-1

Date Collected: 10/23/23 09:58

Matrix: Drinking Water

Date Received: 10/25/23 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			64126	EE6W	EA POM	11/16/23 18:38
Total/NA	Analysis	533		1	64468	SZ9R	EA POM	11/19/23 08:26
Total/NA	Prep	537.1 DW			61199	U7RS	EA POM	10/26/23 12:52
Total/NA	Analysis	537.1		1	61379	SZ9R	EA POM	10/28/23 02:19

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-68496-2

Date Collected: 10/23/23 11:05

Matrix: Drinking Water

Date Received: 10/25/23 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			64126	EE6W	EA POM	11/16/23 18:38
Total/NA	Analysis	533		1	64468	SZ9R	EA POM	11/19/23 08:36
Total/NA	Prep	537.1 DW			61199	U7RS	EA POM	10/26/23 12:52
Total/NA	Analysis	537.1		1	61379	SZ9R	EA POM	10/28/23 02:29

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2

Lab Sample ID: 380-68496-3

Date Collected: 10/23/23 11:38

Matrix: Drinking Water

Date Received: 10/25/23 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			64126	EE6W	EA POM	11/16/23 18:38
Total/NA	Analysis	533		1	64468	SZ9R	EA POM	11/19/23 08:45
Total/NA	Prep	537.1 DW			61199	U7RS	EA POM	10/26/23 12:52
Total/NA	Analysis	537.1		1	61379	SZ9R	EA POM	10/28/23 02:38

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1

Lab Sample ID: 380-68496-4

Date Collected: 10/23/23 10:36

Matrix: Drinking Water

Date Received: 10/25/23 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			64126	EE6W	EA POM	11/16/23 18:38
Total/NA	Analysis	533		1	64468	SZ9R	EA POM	11/19/23 08:55
Total/NA	Prep	537.1 DW			61199	U7RS	EA POM	10/26/23 12:52
Total/NA	Analysis	537.1		1	61379	SZ9R	EA POM	10/28/23 02:48

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-68496-5

Date Collected: 10/23/23 09:58

Matrix: Water

Date Received: 10/25/23 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			63288	EE6W	EA POM	11/12/23 13:15
Total/NA	Analysis	533		1	63691	R6YA	EA POM	11/14/23 15:26

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Lab Chronicle

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

Job ID: 380-68496-1

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-68496-5

Date Collected: 10/23/23 09:58

Matrix: Water

Date Received: 10/25/23 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			61199	U7RS	EA POM	10/26/23 12:52
Total/NA	Analysis	537.1		1	61379	SZ9R	EA POM	10/28/23 02:57

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-68496-6

Date Collected: 10/23/23 11:05

Matrix: Water

Date Received: 10/25/23 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			63288	EE6W	EA POM	11/12/23 13:15
Total/NA	Analysis	533		1	63691	R6YA	EA POM	11/14/23 15:36
Total/NA	Prep	537.1 DW			61199	U7RS	EA POM	10/26/23 12:52
Total/NA	Analysis	537.1		1	61379	SZ9R	EA POM	10/28/23 03:07

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2

Lab Sample ID: 380-68496-7

Date Collected: 10/23/23 11:38

Matrix: Water

Date Received: 10/25/23 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			63288	EE6W	EA POM	11/12/23 13:15
Total/NA	Analysis	533		1	63691	R6YA	EA POM	11/14/23 15:45
Total/NA	Prep	537.1 DW			61199	U7RS	EA POM	10/26/23 12:52
Total/NA	Analysis	537.1		1	61379	SZ9R	EA POM	10/28/23 03:16

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1

Lab Sample ID: 380-68496-8

Date Collected: 10/23/23 10:36

Matrix: Water

Date Received: 10/25/23 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			63288	EE6W	EA POM	11/12/23 13:15
Total/NA	Analysis	533		1	63691	R6YA	EA POM	11/14/23 15:55
Total/NA	Prep	537.1 DW			61658	UMV1	EA POM	10/30/23 13:43
Total/NA	Analysis	537.1		1	61833	R6YA	EA POM	10/31/23 17:47

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: 380-68496-1

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

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

Accreditation/Certification Summary

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

Job ID: 380-68496-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

Analysis Method	Prep Method	Matrix	Analyte
533	533	Water	Perfluoropentanoic acid (PFPeA)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
537.1	537.1 DW	Water	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)



Method Summary

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

Job ID: 380-68496-1

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

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

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

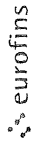
Job ID: 380-68496-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-68496-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	10/23/23 09:58	10/25/23 09:57	HI0000331
380-68496-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	10/23/23 11:05	10/25/23 09:57	HI0000331
380-68496-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2	Drinking Water	10/23/23 11:38	10/25/23 09:57	HI0000331
380-68496-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1	Drinking Water	10/23/23 10:36	10/25/23 09:57	HI0000331
380-68496-5	FB: MOANALUA WELLS (331-223-TP202)	Water	10/23/23 09:58	10/25/23 09:57	
380-68496-6	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	10/23/23 11:05	10/25/23 09:57	
380-68496-7	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) P2	Water	10/23/23 11:38	10/25/23 09:57	
380-68496-8	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) P1	Water	10/23/23 10:36	10/25/23 09:57	



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

Chain of Custody Record



EL J R O T U R N
 1 CA

Client Information		Lab P/M		Carrier Tracking No(s)		COC No						
Company: Dr. Ron Fenstermacher		Arada Rachelle		380-27941-2757 2		380-27941-2757 2						
City & County of Honolulu		E-Mail: Rachelle.Arada@et.eurofins.com		State of Origin		Page 2 of 2						
Address: 630 South Beretania Street Chemistry Lab Honolulu HI 96843		PWSID		Job #		Preservation Codes:						
Phone: 808-748-5091 (tel)		Due Date Requested		Analysis Requested		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)						
Email: rfenstermacher@hbws.org		TAT Requested (days)		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		I - Ice J - DI Water K - EDTA L - EDA Other:						
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site		Compliance Project: C20525101 exp 05312023		SUBCONTRACT - (MOD) 525plus PLUS TICs		Total Number of containers						
Project #: 38001111		WO #: 20525101		SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil		Special Instructions/Note:						
Site: SSOW#		PO #: 808-748-5091		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		② 1-238 5364 8480 38137 751A Gel						
Sample Identification	Sample Date	Sample Time	Sample Type (G=Comp, G=grab)	Preservation Code	Matrix (Water, Swab, Soil, On-wash, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RA	Y	N	537 1_DW_PREC - 537 1 Full List	533 - All Analytes
MOANALUA WELLS	23-Oct-2023	0958	G		Water			3	3			
AIEA GULCH WELLS PUMP2	23-Oct-2023	1108	G		Water			3	3			
AIEA WELLS PUMPS 1&2 (260) P2	23-Oct-2023	1138	G		Water			3	3			
HALAWA WELLS UNITS 1&2 P1	23-Oct-2023	1036	G		Water			3	3			
FB MOANALUA WELLS	23-Oct-2023	0958			Water			1	1			
FB AIEA GULCH WELLS PUMP2	23-Oct-2023	1108			Water			1	1			
FB AIEA WELLS PUMPS 1&2 (260)	23-Oct-2023	1138			Water			1	1			
FB HALAWA WELLS UNITS 1&2	23-Oct-2023	1036			Water			1	1			
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I, II, III, IV, Other (specify)												
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months												
Special Instructions/QC Requirements												
Empty Kit Relinquished by												
Relinquished by BAILEY Date: 21 Oct 2023 1400 Company: HBWS												
Relinquished by Date: 10/25/23 0757 Company: BEAP												
Relinquished by Date: _____ Company: _____												
Custody Seals Intact. Δ Yes Δ No Cooler Temperature(s) °C and Other Remarks: 40.0 5.3-0.1 = 5.2 GEL												

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-68496-1

Login Number: 68496

List Source: Eurofins Eaton Analytical Pomona

List Number: 1

Creator: Edrosa, Rey

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

