

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-61992-1

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: 380-61992-1

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: 380-61992-1

Job ID: 380-61992-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-61992-1

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 9/7/2023 10:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.9°C, 1.0°C, 1.9°C and 2.4°C

PFAS

Method 533: Analyte Perfluorobutanoic acid (PFBA) detected above MRL in preparation batch 380-55421 and analytical batch 380-55910 Method blank. This has also caused MRL check to fail biased high. No back up volume available for re-extraction for sample FB MOANALUA WELLS (380-61992-3) and FB HALAWA WELLS UNITS 1&2 (380-61992-4). Result not acceptable per method. 533 field blanks data excluded due to this QC failure. Field sample MOANALUA WELLS (380-61992-1) data also excluded since PFBA analyte was detected for this sample. 537.1 data was reported as there were no noted QC issues.

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: 380-61992-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-61992-1

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-61992-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.3		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)	2.9		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-61992-3

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-61992-4

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-61992-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-61992-1

Date Collected: 09/05/23 12:00

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 20:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	92		70 - 130			09/12/23 03:50	09/12/23 20:52	1
13C2 PFHxA	107		70 - 130			09/12/23 03:50	09/12/23 20:52	1
13C2 PFDA	103		70 - 130			09/12/23 03:50	09/12/23 20:52	1
13C3-GenX	107		70 - 130			09/12/23 03:50	09/12/23 20:52	1

Client Sample ID: HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-61992-2

Date Collected: 09/05/23 10:15

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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		09/21/23 14:26	09/24/23 14:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluorohexanoic acid (PFHxA)	2.3		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1

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Client Sample Results

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

Job ID: 380-61992-1

Client Sample ID: HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-61992-2

Date Collected: 09/05/23 10:15

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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)	2.4		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluoropentanoic acid (PFPeA)	2.4		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:38	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	66		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C6 PFDA	91		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C5 PFHxA	85		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C4 PFHpA	90		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C8 PFOA	92		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C9 PFNA	94		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C7 PFUnA	89		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C2 PFDoA	92		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C4 PFBA	96		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C5 PFPeA	104		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C3 PFBS	87		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C3 PFHxS	118		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C8 PFOS	94		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C2-4:2-FTS	120		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C2-6:2-FTS	105		50 - 200			09/21/23 14:26	09/24/23 14:38	1
13C2-8:2-FTS	105		50 - 200			09/21/23 14:26	09/24/23 14:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-61992-1

Client Sample ID: HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-61992-2

Date Collected: 09/05/23 10:15

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	2.3		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluorohexanesulfonic acid (PFHxS)	2.9		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	95		70 - 130	09/12/23 03:50	09/12/23 21:02	1
13C2 PFHxA	105		70 - 130	09/12/23 03:50	09/12/23 21:02	1
13C2 PFDA	106		70 - 130	09/12/23 03:50	09/12/23 21:02	1
13C3-GenX	104		70 - 130	09/12/23 03:50	09/12/23 21:02	1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-61992-3

Date Collected: 09/05/23 12:00

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
N-methylperfluorooctanesulfonamidoac etic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-61992-1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-61992-3

Date Collected: 09/05/23 12:00

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	87		70 - 130			09/12/23 03:50	09/12/23 21:12	1
13C2 PFHxA	98		70 - 130			09/12/23 03:50	09/12/23 21:12	1
13C2 PFDA	99		70 - 130			09/12/23 03:50	09/12/23 21:12	1
13C3-GenX	93		70 - 130			09/12/23 03:50	09/12/23 21:12	1

Client Sample ID: FB HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-61992-4

Date Collected: 09/05/23 10:15

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 21:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	94		70 - 130			09/12/23 03:50	09/12/23 21:21	1
13C2 PFHxA	104		70 - 130			09/12/23 03:50	09/12/23 21:21	1
13C2 PFDA	103		70 - 130			09/12/23 03:50	09/12/23 21:21	1
13C3-GenX	102		70 - 130			09/12/23 03:50	09/12/23 21:21	1

Surrogate Summary

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

Job ID: 380-61992-1

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)
380-61992-1	MOANALUA WELLS	92	107	103	107
380-61992-2	HALAWA WELLS UNITS 1&2	95	105	106	104
380-61992-3	FB MOANALUA WELLS	87	98	99	93
380-61992-4	FB HALAWA WELLS UNITS 1&2	94	104	103	102

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)
380-61982-C-1-B MS	Matrix Spike	95	106	104	105
380-61982-C-1-C MSD	Matrix Spike Duplicate	98	103	107	107
LCS 380-55307/23-A	Lab Control Sample	97	106	106	105
LCSD 380-55307/24-A	Lab Control Sample Dup	93	104	108	107
MB 380-55307/21-A	Method Blank	105	108	108	104
MRL 380-55307/22-A	Lab Control Sample	97	100	102	96

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: 380-61992-1

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

Matrix: Drinking 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)
380-61992-2	HALAWA WELLS UNITS 1&2	66	91	85	90	92	94	89	92

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)
380-61992-2	HALAWA WELLS UNITS 1&2	96	104	87	118	94	120	105	105

Surrogate Legend

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

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

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)
380-61087-F-1-A DU	Duplicate	77	95	93	95	96	99	96	95
380-61561-C-1-A MS	Matrix Spike	86	94	98	100	97	97	100	98
LCS 380-56506/23-A	Lab Control Sample	92	100	101	100	98	100	99	100
LCS 380-56506/24-A	Lab Control Sample Dup	90	97	95	98	94	96	91	92
MBL 380-56506/21-A	Method Blank	79	99	85	96	98	100	98	99
MRL 380-56506/22-A	Lab Control Sample	74	100	91	93	97	100	99	98

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)
380-61087-F-1-A DU	Duplicate	95	97	94	118	95	111	102	102
380-61561-C-1-A MS	Matrix Spike	95	107	92	121	95	115	102	102
LCS 380-56506/23-A	Lab Control Sample	97	101	95	122	98	106	96	99
LCS 380-56506/24-A	Lab Control Sample Dup	95	96	95	116	92	100	95	96
MBL 380-56506/21-A	Method Blank	104	101	99	126	99	118	111	113
MRL 380-56506/22-A	Lab Control Sample	104	99	100	125	100	119	107	104

Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA

Isotope Dilution Summary

Job ID: 380-61992-1

Client: City & County of Honolulu

Project/Site: RED-HILL

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

- 1
- 2
- 3
- 4
- 5
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- 8
- 9
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- 11
- 12
- 13
- 14
- 15
- 16

QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: MBL 380-56506/21-A
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56506

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C6 PFDA	99		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C5 PFHxA	85		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C4 PFHpA	96		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C8 PFOA	98		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C9 PFNA	100		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C7 PFUnA	98		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C2 PFDoA	99		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C4 PFBA	104		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C5 PFPeA	101		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C3 PFBS	99		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C3 PFHxS	126		50 - 200	09/21/23 14:26	09/24/23 10:41	1

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QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: MBL 380-56506/21-A
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56506

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	99		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C2-4:2-FTS	118		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C2-6:2-FTS	111		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C2-8:2-FTS	113		50 - 200	09/21/23 14:26	09/24/23 10:41	1

Lab Sample ID: LCS 380-56506/23-A
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56506

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	115		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	122		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	120		ng/L		100	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	106		ng/L		88	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	122		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	120	121		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	120	119		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	117		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	117		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	120	121		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	120	119		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	117		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	120	118		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	118		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	126		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	121		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	129		ng/L		107	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	116		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	124		ng/L		103	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	119		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	121		ng/L		101	70 - 130
Perfluoropentanoic acid (PFPeA)	120	120		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	119		ng/L		99	70 - 130

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QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: LCS 380-56506/23-A
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56506

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	100		ng/L		84	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	92		50 - 200				
13C6 PFDA	100		50 - 200				
13C5 PFHxA	101		50 - 200				
13C4 PFHpA	100		50 - 200				
13C8 PFOA	98		50 - 200				
13C9 PFNA	100		50 - 200				
13C7 PFUnA	99		50 - 200				
13C2 PFDoA	100		50 - 200				
13C4 PFBA	97		50 - 200				
13C5 PFPeA	101		50 - 200				
13C3 PFBS	95		50 - 200				
13C3 PFHxS	122		50 - 200				
13C8 PFOS	98		50 - 200				
13C2-4:2-FTS	106		50 - 200				
13C2-6:2-FTS	96		50 - 200				
13C2-8:2-FTS	99		50 - 200				

Lab Sample ID: LCSD 380-56506/24-A
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56506

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	119		ng/L		99	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	128		ng/L		106	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	118		ng/L		98	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	110		ng/L		91	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	120	120		ng/L		100	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	120	121		ng/L		101	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	120	122		ng/L		102	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	120	118		ng/L		98	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	120	122		ng/L		102	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	120	126		ng/L		105	70 - 130	4	30
Perfluorononanoic acid (PFNA)	120	121		ng/L		100	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	120	122		ng/L		101	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	120	121		ng/L		100	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	120	126		ng/L		105	70 - 130	7	30
Perfluorobutanoic acid (PFBA)	120	121		ng/L		101	70 - 130	2	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: LCSD 380-56506/24-A
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56506

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	127		ng/L		105	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	119		ng/L		99	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	129		ng/L		107	70 - 130	0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	120		ng/L		100	70 - 130	4	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	116		ng/L		96	70 - 130	7	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	122		ng/L		102	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	120		ng/L		100	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	120	121		ng/L		100	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	120	124		ng/L		103	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	120	105		ng/L		88	70 - 130	5	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C3 HFPO-DA	90		50 - 200
13C6 PFDA	97		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	94		50 - 200
13C9 PFNA	96		50 - 200
13C7 PFUnA	91		50 - 200
13C2 PFDoA	92		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	96		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	116		50 - 200
13C8 PFOS	92		50 - 200
13C2-4:2-FTS	100		50 - 200
13C2-6:2-FTS	95		50 - 200
13C2-8:2-FTS	96		50 - 200

Lab Sample ID: MRL 380-56506/22-A
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56506

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.65	J	ng/L		82	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.72	J	ng/L		86	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.88	J	ng/L		94	50 - 150

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QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: MRL 380-56506/22-A
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56506

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.58	J	ng/L		79	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.78	J	ng/L		89	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.83	J	ng/L		92	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.77	J	ng/L		88	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.85	J	ng/L		93	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.76	J	ng/L		88	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.77	J	ng/L		88	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.76	J	ng/L		88	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.84	J	ng/L		92	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.73	J	ng/L		86	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.29	J	ng/L		114	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.00	J	ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	1.80	J	ng/L		90	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.18	J	ng/L		109	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.89	J	ng/L		94	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.57	J	ng/L		78	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.53	J	ng/L		76	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.87	J	ng/L		93	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.22	J	ng/L		61	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
¹³ C3 HFPO-DA	74		50 - 200
¹³ C6 PFDA	100		50 - 200
¹³ C5 PFHxA	91		50 - 200
¹³ C4 PFHpA	93		50 - 200
¹³ C8 PFOA	97		50 - 200
¹³ C9 PFNA	100		50 - 200
¹³ C7 PFUnA	99		50 - 200
¹³ C2 PFDoA	98		50 - 200
¹³ C4 PFBA	104		50 - 200
¹³ C5 PFPeA	99		50 - 200
¹³ C3 PFBS	100		50 - 200
¹³ C3 PFHxS	125		50 - 200
¹³ C8 PFOS	100		50 - 200

QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: MRL 380-56506/22-A
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56506

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	119		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	104		50 - 200

Lab Sample ID: 380-61561-C-1-A MS
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 56506

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	121		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	127		ng/L		105	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	118		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	113		ng/L		94	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	126		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	125		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	122		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	119		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	122		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	129		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	124		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	123		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	121		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	118		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	122		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	124		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	129		ng/L		107	70 - 130
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	121		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	131		ng/L		109	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	128		ng/L		106	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	123		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	124		ng/L		102	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	123		ng/L		102	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	107		ng/L		89	70 - 130

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QC Sample Results

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

Job ID: 380-61992-1

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

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	86		50 - 200
13C6 PFDA	94		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	97		50 - 200
13C9 PFNA	97		50 - 200
13C7 PFUnA	100		50 - 200
13C2 PFDoA	98		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	107		50 - 200
13C3 PFBS	92		50 - 200
13C3 PFHxS	121		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	115		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	102		50 - 200

Lab Sample ID: 380-61087-F-1-A DU
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 56506

Analyte	Sample Result	Sample Qualifier	DU	DU	Unit	D	RPD	RPD Limit
			Result	Qualifier				
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		<2.0		ng/L		NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		<2.0		ng/L		NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		<2.0		ng/L		NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		<2.0		ng/L		NC	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		<2.0		ng/L		NC	30
Perfluorodecanoic acid (PFDA)	<2.0		<2.0		ng/L		NC	30
Perfluorododecanoic acid (PFDoA)	<2.0		<2.0		ng/L		NC	30
Perfluoroheptanoic acid (PFHpA)	<2.0		<2.0		ng/L		NC	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		<2.0		ng/L		NC	30
Perfluorohexanoic acid (PFHxA)	<2.0		<2.0		ng/L		NC	30
Perfluorononanoic acid (PFNA)	<2.0		<2.0		ng/L		NC	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		<2.0		ng/L		NC	30
Perfluorooctanoic acid (PFOA)	<2.0		<2.0		ng/L		NC	30
Perfluoroundecanoic acid (PFUnA)	<2.0		<2.0		ng/L		NC	30
Perfluorobutanoic acid (PFBA)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		<2.0		ng/L		NC	30

QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: 380-61087-F-1-A DU
Matrix: Water
Analysis Batch: 56715

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 56506

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nonafluoro-3,6-dioxahheptanoic acid (NFDHA)	<2.0		<2.0		ng/L		NC	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		<2.0		ng/L		NC	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		<2.0		ng/L		NC	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		<2.0		ng/L		NC	30
Perfluoropentanoic acid (PFPeA)	<2.0		<2.0		ng/L		NC	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		<2.0		ng/L		NC	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		<2.0		ng/L		NC	30

Isotope Dilution	%Recovery	DU Qualifier	DU Limits
13C3 HFPO-DA	77		50 - 200
13C6 PFDA	95		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	95		50 - 200
13C8 PFOA	96		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	96		50 - 200
13C2 PFDoA	95		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	97		50 - 200
13C3 PFBS	94		50 - 200
13C3 PFHxS	118		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	102		50 - 200

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

Lab Sample ID: MB 380-55307/21-A
Matrix: Water
Analysis Batch: 55361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 55307

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1

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QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: MB 380-55307/21-A
Matrix: Water
Analysis Batch: 55361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 55307

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/12/23 03:50	09/12/23 17:27	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
d5-NEtFOSAA	105		70 - 130	09/12/23 03:50	09/12/23 17:27	1
13C2 PFHxA	108		70 - 130	09/12/23 03:50	09/12/23 17:27	1
13C2 PFDA	108		70 - 130	09/12/23 03:50	09/12/23 17:27	1
13C3-GenX	104		70 - 130	09/12/23 03:50	09/12/23 17:27	1

Lab Sample ID: LCS 380-55307/23-A
Matrix: Water
Analysis Batch: 55361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 55307

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	24.6		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	23.2	24.1		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	24.8		ng/L		99	70 - 130
N-methylperfluorooctanesulfonamide-1,1-diacetic acid (NMeFOSAA)	25.1	24.0		ng/L		96	70 - 130
N-ethylperfluorooctanesulfonamide-1,1-diacetic acid (NEtFOSAA)	25.1	24.5		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	25.6		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	25.9		ng/L		103	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	26.8		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	26.6		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	22.9	23.7		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	22.2	21.2		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	26.8		ng/L		107	70 - 130
Perfluorononanoic acid (PFNA)	25.1	27.5		ng/L		110	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	22.5		ng/L		90	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	24.9		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	23.4	24.5		ng/L		104	70 - 130

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QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: LCS 380-55307/23-A
Matrix: Water
Analysis Batch: 55361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 55307

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
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	25.7		ng/L		108	70 - 130
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
d5-NEtFOSAA	97		70 - 130				
13C2 PFHxA	106		70 - 130				
13C2 PFDA	106		70 - 130				
13C3-GenX	105		70 - 130				

Lab Sample ID: LCSD 380-55307/24-A
Matrix: Water
Analysis Batch: 55361

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 55307

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	27.1		ng/L		108	70 - 130	10	30
Perfluorooctanesulfonic acid (PFOS)	23.2	24.7		ng/L		107	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	25.1	26.8		ng/L		107	70 - 130	8	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	23.6		ng/L		94	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	24.2		ng/L		97	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	25.1	26.0		ng/L		104	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	25.1	27.8		ng/L		111	70 - 130	7	30
Perfluorooctanoic acid (PFOA)	25.1	27.0		ng/L		108	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	25.1	28.7		ng/L		114	70 - 130	8	30
Perfluorohexanesulfonic acid (PFHxS)	22.9	24.5		ng/L		107	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	22.2	23.0		ng/L		104	70 - 130	8	30
Perfluoroheptanoic acid (PFHpA)	25.1	26.9		ng/L		108	70 - 130	1	30
Perfluorononanoic acid (PFNA)	25.1	28.0		ng/L		112	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	25.1	24.5		ng/L		98	70 - 130	8	30
Perfluorotridecanoic acid (PFTrDA)	25.1	27.8		ng/L		111	70 - 130	11	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	23.4	25.4		ng/L		109	70 - 130	4	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	23.7	25.3		ng/L		107	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	23.7	26.7		ng/L		113	70 - 130	4	30

QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: LCSD 380-55307/24-A
Matrix: Water
Analysis Batch: 55361

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 55307

<i>Surrogate</i>	<i>LCS D %Recovery</i>	<i>LCS D Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	93		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	108		70 - 130
13C3-GenX	107		70 - 130

Lab Sample ID: MRL 380-55307/22-A
Matrix: Water
Analysis Batch: 55361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 55307

<i>Analyte</i>	<i>Spike Added</i>	<i>MRL Result</i>	<i>MRL Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.88	J	ng/L		94	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.85	1.95	J	ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.13	J	ng/L		106	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.93	J	ng/L		96	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.19	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.06	J	ng/L		113	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.78	J	ng/L		101	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.27	J	ng/L		113	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.17	J	ng/L		109	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.11	J	ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.94	J	ng/L		104	50 - 150
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.97	J	ng/L		104	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.15	J	ng/L		114	50 - 150

<i>Surrogate</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	97		70 - 130
13C2 PFHxA	100		70 - 130
13C2 PFDA	102		70 - 130
13C3-GenX	96		70 - 130

QC Sample Results

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

Job ID: 380-61992-1

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

Lab Sample ID: 380-61982-C-1-C MSD

Matrix: Water

Analysis Batch: 55361

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 55307

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamide doacetic acid (NEtFOSAA)	<2.0		25.1	23.8		ng/L		95	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.2		ng/L		100	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.1		ng/L		104	70 - 130	12	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	27.3		ng/L		105	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	25.9		ng/L		103	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		22.9	25.2		ng/L		102	70 - 130	6	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		22.2	21.4		ng/L		93	70 - 130	6	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	25.4		ng/L		101	70 - 130	7	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	27.2		ng/L		108	70 - 130	4	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	24.4		ng/L		97	70 - 130	16	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	25.6		ng/L		102	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		23.4	23.3		ng/L		99	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		23.7	24.9		ng/L		105	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		23.7	25.6		ng/L		108	70 - 130	1	30
Surrogate											
	MSD %Recovery	MSD Qualifier		Limits							
d5-NEtFOSAA	98			70 - 130							
13C2 PFHxA	103			70 - 130							
13C2 PFDA	107			70 - 130							
13C3-GenX	107			70 - 130							

QC Association Summary

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

Job ID: 380-61992-1

LCMS

Prep Batch: 55307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61992-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-61992-2	HALAWA WELLS UNITS 1&2	Total/NA	Drinking Water	537.1 DW	
380-61992-3	FB MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-61992-4	FB HALAWA WELLS UNITS 1&2	Total/NA	Drinking Water	537.1 DW	
MB 380-55307/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-55307/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-55307/24-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-55307/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-61982-C-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-61982-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 55361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61992-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1	55307
380-61992-2	HALAWA WELLS UNITS 1&2	Total/NA	Drinking Water	537.1	55307
380-61992-3	FB MOANALUA WELLS	Total/NA	Drinking Water	537.1	55307
380-61992-4	FB HALAWA WELLS UNITS 1&2	Total/NA	Drinking Water	537.1	55307
MB 380-55307/21-A	Method Blank	Total/NA	Water	537.1	55307
LCS 380-55307/23-A	Lab Control Sample	Total/NA	Water	537.1	55307
LCSD 380-55307/24-A	Lab Control Sample Dup	Total/NA	Water	537.1	55307
MRL 380-55307/22-A	Lab Control Sample	Total/NA	Water	537.1	55307
380-61982-C-1-B MS	Matrix Spike	Total/NA	Water	537.1	55307
380-61982-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	55307

Prep Batch: 56506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61992-2	HALAWA WELLS UNITS 1&2	Total/NA	Drinking Water	533	
MBL 380-56506/21-A	Method Blank	Total/NA	Water	533	
LCS 380-56506/23-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-56506/24-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-56506/22-A	Lab Control Sample	Total/NA	Water	533	
380-61561-C-1-A MS	Matrix Spike	Total/NA	Water	533	
380-61087-F-1-A DU	Duplicate	Total/NA	Water	533	

Analysis Batch: 56715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61992-2	HALAWA WELLS UNITS 1&2	Total/NA	Drinking Water	533	56506
MBL 380-56506/21-A	Method Blank	Total/NA	Water	533	56506
LCS 380-56506/23-A	Lab Control Sample	Total/NA	Water	533	56506
LCSD 380-56506/24-A	Lab Control Sample Dup	Total/NA	Water	533	56506
MRL 380-56506/22-A	Lab Control Sample	Total/NA	Water	533	56506
380-61561-C-1-A MS	Matrix Spike	Total/NA	Water	533	56506
380-61087-F-1-A DU	Duplicate	Total/NA	Water	533	56506

Lab Chronicle

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

Job ID: 380-61992-1

Client Sample ID: MOANALUA WELLS

Date Collected: 09/05/23 12:00

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61992-1

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			55307	U7RS	EA POM	09/12/23 03:50
Total/NA	Analysis	537.1		1	55361	UKYM	EA POM	09/12/23 20:52

Client Sample ID: HALAWA WELLS UNITS 1&2

Date Collected: 09/05/23 10:15

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61992-2

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			56506	UMV1	EA POM	09/21/23 14:26
Total/NA	Analysis	533		1	56715	UKYM	EA POM	09/24/23 14:38
Total/NA	Prep	537.1 DW			55307	U7RS	EA POM	09/12/23 03:50
Total/NA	Analysis	537.1		1	55361	UKYM	EA POM	09/12/23 21:02

Client Sample ID: FB MOANALUA WELLS

Date Collected: 09/05/23 12:00

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61992-3

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			55307	U7RS	EA POM	09/12/23 03:50
Total/NA	Analysis	537.1		1	55361	UKYM	EA POM	09/12/23 21:12

Client Sample ID: FB HALAWA WELLS UNITS 1&2

Date Collected: 09/05/23 10:15

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61992-4

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			55307	U7RS	EA POM	09/12/23 03:50
Total/NA	Analysis	537.1		1	55361	UKYM	EA POM	09/12/23 21:21

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: 380-61992-1

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)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafluoro-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)

Method Summary

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

Job ID: 380-61992-1

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: 380-61992-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-61992-1	MOANALUA WELLS	Drinking Water	09/05/23 12:00	09/07/23 10:40
380-61992-2	HALAWA WELLS UNITS 1&2	Drinking Water	09/05/23 10:15	09/07/23 10:40
380-61992-3	FB MOANALUA WELLS	Drinking Water	09/05/23 12:00	09/07/23 10:40
380-61992-4	FB HALAWA WELLS UNITS 1&2	Drinking Water	09/05/23 10:15	09/07/23 10:40

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- 14
- 15
- 16

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

Chain of Custody Record

eurofins | Environment Testing
 America

Client Information		Sampler: <u>Bryson Nakamoto</u>		Lab PM	Carrier Tracking No(s)		COC No
Client Contact: Dr. Ron Fenstermacher		Phone: 808-748-5840		Arada, Rachelle	State of Origin		380-27941-2757 2
Company: City & County of Honolulu		PWSID		E-Mail: Rachelle.Arada@teuronisus.com	Job #		Page 2 of 2
Address: 630 South Beretania Street, Chemistry Lab Honolulu		Due Date Requested:		Analysis Requested			
State, Zip: HI, 96843		TAT Requested (days):		<input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Phone: 808-748-5091 (tel)		Compliance Project: <input type="checkbox"/> No		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Email: fenstermacher@hbws.org		PO #: C20525101 exp 05312023		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill		WO #:		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Site: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill		Project #: 38001111		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
SSOW#:		Sample Date		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Sample Identification		Sample Time		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
MOANALUA WELLS		9/5/2023 1200		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
AIEA GULCH WELLS PUMP2				<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
AIEA WELLS PUMPS 1&2 (260)				<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
HALAWA WELLS UNITS 1&2		9/5/2023 1015		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
FB MOANALUA WELLS				<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
FB AIEA GULCH WELLS PUMP2				<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
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FB HALAWA WELLS UNITS 1&2		9/5/2023		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Possible Hazard Identification		Sample Date		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
<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		Sample Time		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Deliverable Requested: I, II, III, IV, Other (specify)		Sample Date		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Empty Kit Relinquished by:		Sample Time		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Relinquished by:		Date: 9/5/2023 1300		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Relinquished by:		Date/Time: 9/5/2023 1300		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Relinquished by:		Date/Time:		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Date/Time:		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			
Custody Seal No.:		Date/Time:		<input type="checkbox"/> 533 - All Analytes <input type="checkbox"/> 537.1 DM_PREC - 537.1 Full List <input type="checkbox"/> 526.2_PREC - (MOD) 525plus PLUS TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No)			



Special Instructions/Note:
 Pump 2
 Pump 1
 380-61992 COC
 7733 2749 ① 3730 ③ 3751
 Method of Shipment: FEDEX ② 3740 ④ 3762
 Date/Time: 09/07/2023 10:40
 Company: FEATP
 Date/Time: 09/07/2023 10:40
 Company: FEATP
 Date/Time: 09/07/2023 10:40
 Company: FEATP
 Cooler Temperature(s) °C and Other Remarks:
 (BEL-FROZEN) (ASH) -0.2 / 01.2 - 1.0 / 02.1 - 1.9 / 03.1 - 0.9 / 04.2 - 2.4
 Ver 01/16/2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-61992-1

Login Number: 61992

List Source: Eurofins Eaton Analytical Pomona

List Number: 1

Creator: Sanchez Velasquez, Gustavo

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
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	