

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Ka'amilo Wells P1/P2

JOB NUMBER

380-160919-1

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization



Authorized for release by
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Definitions/Glossary

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Qualifiers

LCMS

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

Glossary

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

Case Narrative

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

Job ID: 380-160919-1

Job ID: 380-160919-1

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Job Narrative 380-160919-1

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

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

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

Receipt

The samples were received on 7/16/2025 4:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C.

PFAS

Method 533: The following QC issues in preparation batch 380-163787 and 380-164234 and analytical batch 380-163821 were observed:

IDA 13C3 HFPO-DA, 13C6 PFDA, 13C5 PFHxA, 13C4 PFHpA, 13C8 PFOA, 13C9 PFNA, 13C7 PFUnA and 13C2 PFDoA recovery for the following sample: Ka'amilo Wells P1 (380-160919-1) was below method limits (low bias). Sample Ka'amilo Wells P1 (380-160919-1) was re-extracted and re-analyzed. Affected target analytes flagged due to IDA failure. PFAS results for 533 for Ka'amilo Wells P1 (380-160919-1) collected on 07/14/25 are not acceptable for compliance reporting due to QC failures of Isotope Dilution Analytes (IDA) not meeting the method Limits. 533 data excluded due to this QC failure, 537.1 data was reported as there were no noted QC issues. The sample is collected weekly thus a follow up sample was collected on 07/21/25 under job (380-162319-1). Analysis by method EPA 533 is currently in progress. (XWB4)

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

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Detection Summary

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: Ka'amilo Wells P1

Lab Sample ID: 380-160919-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	4.2		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	3.4		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	3.6		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L	1		537.1	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: Ka'amilo Wells P2

Lab Sample ID: 380-160919-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.0		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.8		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.8		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	3.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	3.0		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	3.1		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.3		2.0	ng/L	1		537.1	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.5		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB: Ka'amilo Wells P1

Lab Sample ID: 380-160919-3

No Detections.

Client Sample ID: FB: Ka'amilo Wells P2

Lab Sample ID: 380-160919-4

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: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: Ka'amilo Wells P1

Lab Sample ID: 380-160919-1

Date Collected: 07/14/25 11:36

Matrix: Water

Date Received: 07/16/25 16:45

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		07/17/25 03:00	07/17/25 18:28	1
Perfluorooctanesulfonic acid (PFOS)	4.2		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluorohexanoic acid (PFHxA)	3.4		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluorooctanoic acid (PFOA)	3.6		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluorobutanesulfonic acid (PFBS)	2.8		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	108		70 - 130			07/17/25 03:00	07/17/25 18:28	1
13C2 PFHxA	114		70 - 130			07/17/25 03:00	07/17/25 18:28	1
13C2 PFDA	111		70 - 130			07/17/25 03:00	07/17/25 18:28	1
13C3-GenX	108		70 - 130			07/17/25 03:00	07/17/25 18:28	1

Client Sample ID: Ka'amilo Wells P2

Lab Sample ID: 380-160919-2

Date Collected: 07/14/25 12:17

Matrix: Water

Date Received: 07/16/25 16:45

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		07/19/25 03:42	07/19/25 17:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluorobutanesulfonic acid (PFBS)	2.4		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1

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Client Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: Ka'amilo Wells P2

Lab Sample ID: 380-160919-2

Date Collected: 07/14/25 12:17

Matrix: Water

Date Received: 07/16/25 16:45

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	3.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluorohexanoic acid (PFHxA)	2.8		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluorooctanesulfonic acid (PFOS)	3.2		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluorooctanoic acid (PFOA)	2.8		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluoropentanoic acid (PFPeA)	3.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	69		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C6 PFDA	69		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C5 PFHxA	74		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C4 PFHpA	77		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C8 PFOA	75		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C9 PFNA	71		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C7 PFUnA	68		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C2 PFDoA	67		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C4 PFBA	90		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C5 PFPeA	90		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C3 PFBS	109		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C3 PFHxS	109		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C8 PFOS	115		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C2-4:2-FTS	127		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C2-6:2-FTS	114		50 - 200	07/19/25 03:42	07/19/25 17:05	1
13C2-8:2-FTS	110		50 - 200	07/19/25 03:42	07/19/25 17:05	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1

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Client Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: Ka'amilo Wells P2

Lab Sample ID: 380-160919-2

Date Collected: 07/14/25 12:17

Matrix: Water

Date Received: 07/16/25 16:45

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorohexanoic acid (PFHxA)	3.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorooctanoic acid (PFOA)	3.1		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorohexanesulfonic acid (PFHxS)	3.3		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorobutanesulfonic acid (PFBS)	2.5		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	105		70 - 130			07/17/25 03:00	07/17/25 18:39	1
13C2 PFHxA	103		70 - 130			07/17/25 03:00	07/17/25 18:39	1
13C2 PFDA	109		70 - 130			07/17/25 03:00	07/17/25 18:39	1
13C3-GenX	105		70 - 130			07/17/25 03:00	07/17/25 18:39	1

Client Sample ID: FB: Ka'amilo Wells P1

Lab Sample ID: 380-160919-3

Date Collected: 07/14/25 11:36

Matrix: Water

Date Received: 07/16/25 16:45

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		07/17/25 03:00	07/17/25 18:49	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1

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Client Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: FB: Ka'amilo Wells P1

Lab Sample ID: 380-160919-3

Date Collected: 07/14/25 11:36

Matrix: Water

Date Received: 07/16/25 16:45

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		07/17/25 03:00	07/17/25 18:49	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130			07/17/25 03:00	07/17/25 18:49	1
13C2 PFHxA	106		70 - 130			07/17/25 03:00	07/17/25 18:49	1
13C2 PFDA	108		70 - 130			07/17/25 03:00	07/17/25 18:49	1
13C3-GenX	104		70 - 130			07/17/25 03:00	07/17/25 18:49	1

Client Sample ID: FB: Ka'amilo Wells P2

Lab Sample ID: 380-160919-4

Date Collected: 07/14/25 12:17

Matrix: Water

Date Received: 07/16/25 16:45

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		07/19/25 03:42	07/19/25 17:24	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1

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Client Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: FB: Ka'amilo Wells P2

Lab Sample ID: 380-160919-4

Date Collected: 07/14/25 12:17

Matrix: Water

Date Received: 07/16/25 16:45

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/19/25 03:42	07/19/25 17:24	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	98		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C6 PFDA	118		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C5 PFHxA	109		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C4 PFHpA	113		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C8 PFOA	117		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C9 PFNA	123		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C7 PFUnA	118		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C2 PFDoA	118		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C4 PFBA	114		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C5 PFPeA	119		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C3 PFBS	108		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C3 PFHxS	104		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C8 PFOS	113		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C2-4:2-FTS	125		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C2-6:2-FTS	109		50 - 200			07/19/25 03:42	07/19/25 17:24	1
13C2-8:2-FTS	111		50 - 200			07/19/25 03:42	07/19/25 17:24	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/25 03:00	07/17/25 18:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	110		70 - 130			07/17/25 03:00	07/17/25 18:58	1
13C2 PFHxA	110		70 - 130			07/17/25 03:00	07/17/25 18:58	1

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Client Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: FB: Ka'amilo Wells P2

Lab Sample ID: 380-160919-4

Date Collected: 07/14/25 12:17

Matrix: Water

Date Received: 07/16/25 16:45

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	114		70 - 130	07/17/25 03:00	07/17/25 18:58	1
13C3-GenX	111		70 - 130	07/17/25 03:00	07/17/25 18:58	1

Action Limit Summary

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: Ka'amilo Wells P1

Lab Sample ID: 380-160919-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.2		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	3.6		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.4		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: Ka'amilo Wells P2

Lab Sample ID: 380-160919-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.2		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	2.8		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	3.1		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.3		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB: Ka'amilo Wells P1

Lab Sample ID: 380-160919-3

Compliance Check

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

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

Action Limit Summary

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: FB: Ka'amilo Wells P2

Lab Sample ID: 380-160919-4

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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)
380-160919-1	Ka'amilo Wells P1	108	114	111	108
380-160919-2	Ka'amilo Wells P2	105	103	109	105
380-160919-3	FB: Ka'amilo Wells P1	106	106	108	104
380-160919-4	FB: Ka'amilo Wells P2	110	110	114	111
380-161024-E-1-A MS	Matrix Spike	107	104	103	102
380-161024-F-1-A MSD	Matrix Spike Duplicate	101	108	108	104
LCS 380-163332/37-A	Lab Control Sample	101	104	106	99
MBL 380-163332/35-A	Method Blank	107	113	110	110
MRL 380-163332/36-A	Lab Control Sample	97	101	104	95

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: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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)	PFDaA (50-200)
380-160919-2	Ka'amilo Wells P2	69	69	74	77	75	71	68	67
380-160919-4	FB: Ka'amilo Wells P2	98	118	109	113	117	123	118	118
380-160935-B-1-A MS	Matrix Spike	97	107	98	101	102	107	109	108
380-160935-C-1-A MSD	Matrix Spike Duplicate	93	106	94	98	101	107	112	114
LCS 380-163787/22-A	Lab Control Sample	101	116	109	111	115	118	118	118
MBL 380-163787/20-A	Method Blank	95	110	108	109	110	113	107	107
MRL 380-163787/21-A	Lab Control Sample	94	113	108	111	112	115	114	113

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)
380-160919-2	Ka'amilo Wells P2	90	90	109	109	115	127	114	110
380-160919-4	FB: Ka'amilo Wells P2	114	119	108	104	113	125	109	111
380-160935-B-1-A MS	Matrix Spike	106	110	106	104	109	121	107	108
380-160935-C-1-A MSD	Matrix Spike Duplicate	103	109	110	108	116	121	112	112
LCS 380-163787/22-A	Lab Control Sample	114	122	109	109	115	117	106	111
MBL 380-163787/20-A	Method Blank	109	111	109	106	108	131	113	104
MRL 380-163787/21-A	Lab Control Sample	110	116	105	106	112	122	105	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

QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: MBL 380-163787/20-A

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 163787

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		07/19/25 03:42	07/19/25 15:58	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		07/19/25 03:42	07/19/25 15:58	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C6 PFDA	110		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C5 PFHxA	108		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C4 PFHpA	109		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C8 PFOA	110		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C9 PFNA	113		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C7 PFUnA	107		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C2 PFDoA	107		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C4 PFBA	109		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C5 PFPeA	111		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C3 PFBS	109		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C3 PFHxS	106		50 - 200	07/19/25 03:42	07/19/25 15:58	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: MBL 380-163787/20-A

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 163787

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	108		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C2-4:2-FTS	131		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C2-6:2-FTS	113		50 - 200	07/19/25 03:42	07/19/25 15:58	1
13C2-8:2-FTS	104		50 - 200	07/19/25 03:42	07/19/25 15:58	1

Lab Sample ID: LCS 380-163787/22-A

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 163787

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	103		ng/L		86	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	104		ng/L		86	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	107		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	111		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	109		ng/L		91	70 - 130
Perfluorodecanoic acid (PFDA)	120	105		ng/L		87	70 - 130
Perfluorododecanoic acid (PFDoA)	120	107		ng/L		89	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	105		ng/L		87	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	110		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	120	105		ng/L		87	70 - 130
Perfluorononanoic acid (PFNA)	120	103		ng/L		86	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	103		ng/L		86	70 - 130
Perfluorooctanoic acid (PFOA)	120	104		ng/L		87	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	106		ng/L		88	70 - 130
Perfluorobutanoic acid (PFBA)	120	107		ng/L		89	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	103		ng/L		86	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	109		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	109		ng/L		90	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	107		ng/L		89	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	110		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	104		ng/L		87	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	103		ng/L		86	70 - 130
Perfluoropentanoic acid (PFPeA)	120	105		ng/L		88	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	100		ng/L		84	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: LCS 380-163787/22-A

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 163787

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	110		ng/L		91	70 - 130
	LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	101		50 - 200				
13C6 PFDA	116		50 - 200				
13C5 PFHxA	109		50 - 200				
13C4 PFHpA	111		50 - 200				
13C8 PFOA	115		50 - 200				
13C9 PFNA	118		50 - 200				
13C7 PFUnA	118		50 - 200				
13C2 PFDoA	118		50 - 200				
13C4 PFBA	114		50 - 200				
13C5 PFPeA	122		50 - 200				
13C3 PFBS	109		50 - 200				
13C3 PFHxS	109		50 - 200				
13C8 PFOS	115		50 - 200				
13C2-4:2-FTS	117		50 - 200				
13C2-6:2-FTS	106		50 - 200				
13C2-8:2-FTS	111		50 - 200				

Lab Sample ID: MRL 380-163787/21-A

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 163787

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.98	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.00	1.91	J	ng/L		95	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.99	J	ng/L		99	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.01	J	ng/L		101	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.97	J	ng/L		98	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.47	J	ng/L		123	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: MRL 380-163787/21-A

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 163787

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.19	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.28	J	ng/L		114	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.13	J	ng/L		106	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	2.01	J	ng/L		100	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.08	J	ng/L		104	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	94		50 - 200
13C6 PFDA	113		50 - 200
13C5 PFHxA	108		50 - 200
13C4 PFHpA	111		50 - 200
13C8 PFOA	112		50 - 200
13C9 PFNA	115		50 - 200
13C7 PFUnA	114		50 - 200
13C2 PFDoA	113		50 - 200
13C4 PFBA	110		50 - 200
13C5 PFPeA	116		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	112		50 - 200
13C2-4:2-FTS	122		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	103		50 - 200

Lab Sample ID: 380-160935-B-1-A MS

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 163787

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		120	110		ng/L		92	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	111		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	107		ng/L		89	70 - 130

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QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: 380-160935-B-1-A MS

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 163787

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	115		ng/L		96	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	113		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	111		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	116		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	109		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	113		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	114		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	107		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	110		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	111		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	113		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	112		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	112		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	106		ng/L		88	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	112		ng/L		93	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		120	120		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	118		ng/L		98	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	115		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	108		ng/L		89	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	111		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	104		ng/L		87	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	115		ng/L		96	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	97		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	101		50 - 200
13C8 PFOA	102		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	110		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	109		50 - 200

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QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: 380-160935-B-1-A MS

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 163787

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	121		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	108		50 - 200

Lab Sample ID: 380-160935-C-1-A MSD

Matrix: Water

Analysis Batch: 163821

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 163787

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	107		ng/L		89	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		120	108		ng/L		90	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	103		ng/L		85	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	106		ng/L		88	70 - 130	8	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	111		ng/L		93	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		120	108		ng/L		90	70 - 130	2	30
Perfluorododecanoic acid (PFDaA)	<2.0		120	109		ng/L		90	70 - 130	6	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	105		ng/L		88	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	112		ng/L		93	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	110		ng/L		92	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		120	103		ng/L		86	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	108		ng/L		90	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		120	105		ng/L		88	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	110		ng/L		91	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		120	108		ng/L		90	70 - 130	4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	106		ng/L		88	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	110		ng/L		91	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	111		ng/L		92	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	112		ng/L		93	70 - 130	7	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		120	113		ng/L		94	70 - 130	4	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	107		ng/L		89	70 - 130	8	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	102		ng/L		85	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	106		ng/L		88	70 - 130	5	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	103		ng/L		85	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	112		ng/L		93	70 - 130	3	30

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QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	93		50 - 200
13C6 PFDA	106		50 - 200
13C5 PFHxA	94		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	101		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	112		50 - 200
13C2 PFDoA	114		50 - 200
13C4 PFBA	103		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	110		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	116		50 - 200
13C2-4:2-FTS	121		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	112		50 - 200

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

Lab Sample ID: MBL 380-163332/35-A
Matrix: Water
Analysis Batch: 163418

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 163332

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		07/17/25 03:00	07/17/25 14:42	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/17/25 03:00	07/17/25 14:42	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130			07/17/25 03:00	07/17/25 14:42	1
13C2 PFHxA	113		70 - 130			07/17/25 03:00	07/17/25 14:42	1
13C2 PFDA	110		70 - 130			07/17/25 03:00	07/17/25 14:42	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: MBL 380-163332/35-A
Matrix: Water
Analysis Batch: 163418

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 163332

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	110		70 - 130	07/17/25 03:00	07/17/25 14:42	1

Lab Sample ID: LCS 380-163332/37-A
Matrix: Water
Analysis Batch: 163418

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 163332

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	25.1	25.4		ng/L		102	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	25.1	26.1		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	27.0		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	25.2		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	25.3		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	25.6		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	26.3		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	26.6		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	27.0		ng/L		108	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	26.7		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	25.7		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	26.3		ng/L		105	70 - 130
Perfluorononanoic acid (PFNA)	25.1	27.4		ng/L		109	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	27.1		ng/L		108	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	28.8		ng/L		115	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	26.9		ng/L		107	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	25.8		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	26.4		ng/L		106	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	101		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	99		70 - 130

QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: MRL 380-163332/36-A

Matrix: Water

Analysis Batch: 163418

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 163332

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.19	J	ng/L		109	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.11	J	ng/L		105	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.95	J	ng/L		97	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.22	J	ng/L		111	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.09	J	ng/L		104	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.11	J	ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.11	J	ng/L		105	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	97		70 - 130
13C2 PFHxA	101		70 - 130
13C2 PFDA	104		70 - 130
13C3-GenX	95		70 - 130

Lab Sample ID: 380-161024-E-1-A MS

Matrix: Water

Analysis Batch: 163418

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 163332

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	25.3		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	26.4		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.2		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	26.4		ng/L		105	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: 380-161024-E-1-A MS

Matrix: Water

Analysis Batch: 163418

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 163332

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	26.1		ng/L		104	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.0		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	25.9		ng/L		103	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	25.8		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	25.4		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	26.9		ng/L		108	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	26.4		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	25.8		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	26.4		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	23.8		ng/L		95	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	27.5		ng/L		110	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	26.4		ng/L		106	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	25.1		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	26.2		ng/L		105	70 - 130

Lab Sample ID: 380-161024-F-1-A MSD

Matrix: Water

Analysis Batch: 163418

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 163332

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	25.0		ng/L		100	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	26.3		ng/L		105	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.6		ng/L		106	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	26.2		ng/L		105	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	25.2		ng/L		100	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.1		ng/L		104	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	25.6		ng/L		102	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	26.2		ng/L		104	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	26.2		ng/L		104	70 - 130	3	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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

Lab Sample ID: 380-161024-F-1-A MSD

Matrix: Water

Analysis Batch: 163418

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 163332

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	26.5		ng/L		106	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	26.5		ng/L		106	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	26.1		ng/L		104	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	27.3		ng/L		109	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	25.4		ng/L		101	70 - 130	6	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.1	27.7		ng/L		111	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	26.6		ng/L		106	70 - 130	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	26.0		ng/L		104	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	26.4		ng/L		105	70 - 130	1	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	101		70 - 130								
13C2 PFHxA	108		70 - 130								
13C2 PFDA	108		70 - 130								
13C3-GenX	104		70 - 130								

QC Association Summary

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

LCMS

Prep Batch: 163332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-160919-1	Ka'amilo Wells P1	Total/NA	Water	537.1 DW	
380-160919-2	Ka'amilo Wells P2	Total/NA	Water	537.1 DW	
380-160919-3	FB: Ka'amilo Wells P1	Total/NA	Water	537.1 DW	
380-160919-4	FB: Ka'amilo Wells P2	Total/NA	Water	537.1 DW	
MBL 380-163332/35-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-163332/37-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-163332/36-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-161024-E-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-161024-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 163418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-160919-1	Ka'amilo Wells P1	Total/NA	Water	537.1	163332
380-160919-2	Ka'amilo Wells P2	Total/NA	Water	537.1	163332
380-160919-3	FB: Ka'amilo Wells P1	Total/NA	Water	537.1	163332
380-160919-4	FB: Ka'amilo Wells P2	Total/NA	Water	537.1	163332
MBL 380-163332/35-A	Method Blank	Total/NA	Water	537.1	163332
LCS 380-163332/37-A	Lab Control Sample	Total/NA	Water	537.1	163332
MRL 380-163332/36-A	Lab Control Sample	Total/NA	Water	537.1	163332
380-161024-E-1-A MS	Matrix Spike	Total/NA	Water	537.1	163332
380-161024-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	163332

Prep Batch: 163787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-160919-2	Ka'amilo Wells P2	Total/NA	Water	533	
380-160919-4	FB: Ka'amilo Wells P2	Total/NA	Water	533	
MBL 380-163787/20-A	Method Blank	Total/NA	Water	533	
LCS 380-163787/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-163787/21-A	Lab Control Sample	Total/NA	Water	533	
380-160935-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-160935-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 163821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-160919-2	Ka'amilo Wells P2	Total/NA	Water	533	163787
380-160919-4	FB: Ka'amilo Wells P2	Total/NA	Water	533	163787
MBL 380-163787/20-A	Method Blank	Total/NA	Water	533	163787
LCS 380-163787/22-A	Lab Control Sample	Total/NA	Water	533	163787
MRL 380-163787/21-A	Lab Control Sample	Total/NA	Water	533	163787
380-160935-B-1-A MS	Matrix Spike	Total/NA	Water	533	163787
380-160935-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	163787

Lab Chronicle

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Client Sample ID: Ka'amilo Wells P1

Lab Sample ID: 380-160919-1

Date Collected: 07/14/25 11:36

Matrix: Water

Date Received: 07/16/25 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			163332	G9MN	EA POM	07/17/25 03:00
Total/NA	Analysis	537.1		1	163418	Y5FM	EA POM	07/17/25 18:28

Client Sample ID: Ka'amilo Wells P2

Lab Sample ID: 380-160919-2

Date Collected: 07/14/25 12:17

Matrix: Water

Date Received: 07/16/25 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			163787	XTD8	EA POM	07/19/25 03:42
Total/NA	Analysis	533		1	163821	M7ML	EA POM	07/19/25 17:05
Total/NA	Prep	537.1 DW			163332	G9MN	EA POM	07/17/25 03:00
Total/NA	Analysis	537.1		1	163418	Y5FM	EA POM	07/17/25 18:39

Client Sample ID: FB: Ka'amilo Wells P1

Lab Sample ID: 380-160919-3

Date Collected: 07/14/25 11:36

Matrix: Water

Date Received: 07/16/25 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			163332	G9MN	EA POM	07/17/25 03:00
Total/NA	Analysis	537.1		1	163418	Y5FM	EA POM	07/17/25 18:49

Client Sample ID: FB: Ka'amilo Wells P2

Lab Sample ID: 380-160919-4

Date Collected: 07/14/25 12:17

Matrix: Water

Date Received: 07/16/25 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			163787	XTD8	EA POM	07/19/25 03:42
Total/NA	Analysis	533		1	163821	M7ML	EA POM	07/19/25 17:24
Total/NA	Prep	537.1 DW			163332	G9MN	EA POM	07/17/25 03:00
Total/NA	Analysis	537.1		1	163418	Y5FM	EA POM	07/17/25 18:58

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: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-26

Method Summary

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

Job ID: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

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: 380-160919-1
SDG: PFAS: Ka'amilo Wells P1/P2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-160919-1	Ka'amilo Wells P1	Water	07/14/25 11:36	07/16/25 16:45
380-160919-2	Ka'amilo Wells P2	Water	07/14/25 12:17	07/16/25 16:45
380-160919-3	FB: Ka'amilo Wells P1	Water	07/14/25 11:36	07/16/25 16:45
380-160919-4	FB: Ka'amilo Wells P2	Water	07/14/25 12:17	07/16/25 16:45

Phone (626) 386-1100

Environment Testing
America

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-160919-1

SDG Number: PFAS: Ka'amilo Wells P1/P2

Login Number: 160919

List Number: 1

Creator: Ngo, Theodore

List Source: Eurofins Eaton Analytical Pomona

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