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ANALYTICAL REPORT

PREPARED FOR

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Honolulu, Hawaii 96843

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JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-147443-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization

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Authorized for release by
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Table of Contents

Definitions/Glossary

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

Job ID: 380-147443-1
SDG: Weekly PFAS

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
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

Job Narrative
380-147443-1

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 4/24/2025 9:34 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.7°C.

PFAS
Method 533: The following QC issues preparation batch 380-149464 and analytical batch 380-149506 were observed:
IDA recovery for sample 380-147443-C-4-A MSD (380-2257982) failed to meet method limits (low bias) for analyte(s) 13C3 HFPO-DA, 13C6 PFDA, 13C8 PFOA, 13C7 PFUnA and 13C2 PFDoA. Extracts were re-analyzed for confirmation. No volume available for re-extraction. Affected target analytes flagged due to IDA failure (s). IDA passed in MS, precision (%RPD) passed between MS and MSD thus no impact to the native sample 380-147443. All other QC including LCS were acceptable. (XWB4)

Method 537.1_DW_PREC: The following QC issues in 380-149432 and 380-149466 were observed:
Surrogate Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) recovery for MBL 380-149432/1-A (380-2257224) and LCS 380-149432/3-A (380-2257226) was below method limits (low bias). Extracts were re-analyzed for confirmation. No volume available for re-extraction of affected samples MOANALUA WELLS (380-147443-1), FB Moanalua Wells (380-147443-5), FB Halawa Wells Units 1&2 (380-147443-6), FB Aiea Gulch Wells Pump 1 (380-147443-7) and FB Aiea Gulch Wells Pump 2 (380-147443-8). Result not acceptable per method. 537.1 data excluded due to this QC failure, PFAS 533 was reported as there were no noted QC issues. (XWB4)

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: 380-147443-1
SDG: Weekly PFAS

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-147443-1

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1&2 P1 — Lab Sample ID: 380-147443-2

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)	2.5		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0		ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.6		2.0		ng/L	1		533	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 1 — Lab Sample ID: 380-147443-3

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-147443-4

No Detections.

Client Sample ID: FB Moanalua Wells — Lab Sample ID: 380-147443-5

No Detections.

Client Sample ID: FB Halawa Wells Units 1&2 — Lab Sample ID: 380-147443-6

No Detections.

Client Sample ID: FB Aiea Gulch Wells Pump 1 — Lab Sample ID: 380-147443-7

No Detections.

Client Sample ID: FB Aiea Gulch Wells Pump 2 — Lab Sample ID: 380-147443-8

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-147443-1
SDG: Weekly PFAS

Client Sample ID: MOANALUA WELLS

Date Collected: 04/21/25 09:26
Date Received: 04/24/25 09:34

Lab Sample ID: 380-147443-1

Matrix: Water

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		05/02/25 07:12	05/02/25 23:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*79*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C6 PFDA	*87*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C5 PFHxA	*89*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C4 PFHpA	*92*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C8 PFOA	*90*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C9 PFNA	*89*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C7 PFUnA	*87*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C2 PFDoA	*89*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C4 PFBA	*92*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C5 PFPeA	*93*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C3 PFBS	*106*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C3 PFHxS	*105*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*
13C8 PFOS	*104*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:12*	*1*

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-147443-1
Matrix: Water
Date Collected: 04/21/25 09:26
Date Received: 04/24/25 09:34

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	123		50 - 200	05/02/25 07:12	05/02/25 23:12	1
13C2-6:2-FTS	124		50 - 200	05/02/25 07:12	05/02/25 23:12	1
13C2-8:2-FTS	105		50 - 200	05/02/25 07:12	05/02/25 23:12	1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-147443-2
Matrix: Water
Date Collected: 04/21/25 09:57
Date Received: 04/24/25 09:34

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		05/02/25 07:12	05/02/25 23:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluorohexanesulfonic acid (PFHxS)	**2.5**		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluorohexanoic acid (PFHxA)	**2.5**		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluorooctanesulfonic acid (PFOS)	**2.3**		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluoropentanoic acid (PFPeA)	**2.6**		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/02/25 07:12	05/02/25 23:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		50 - 200	05/02/25 07:12	05/02/25 23:23	1
13C6 PFDA	87		50 - 200	05/02/25 07:12	05/02/25 23:23	1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-147443-2
Date Collected: 04/21/25 09:57
Matrix: Water
Date Received: 04/24/25 09:34

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFHxA	*88*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C4 PFHpA	*89*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C8 PFOA	*89*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C9 PFNA	*86*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C7 PFUnA	*85*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C2 PFDoA	*89*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C4 PFBA	*89*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C5 PFPeA	*90*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C3 PFBS	*114*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C3 PFHxS	*112*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C8 PFOS	*105*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C2-4:2-FTS	*121*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C2-6:2-FTS	*119*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*
13C2-8:2-FTS	*105*		*50 - 200*	*05/02/25 07:12*	*05/02/25 23:23*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 1

Lab Sample ID: 380-147443-3
Date Collected: 04/21/25 10:32
Matrix: Water
Date Received: 04/24/25 09:34

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		04/26/25 12:50	04/28/25 00:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1

Client Sample ID: AIEA GULCH WELLS PUMP 1

Lab Sample ID: 380-147443-3
Date Collected: 04/21/25 10:32
Matrix: Water
Date Received: 04/24/25 09:34

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		04/26/25 12:50	04/28/25 00:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*73*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C6 PFDA	*82*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C5 PFHxA	*89*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C4 PFHpA	*86*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C8 PFOA	*81*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C9 PFNA	*82*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C7 PFUnA	*87*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C2 PFDoA	*81*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C4 PFBA	*85*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C5 PFPeA	*80*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C3 PFBS	*98*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C3 PFHxS	*98*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C8 PFOS	*98*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C2-4:2-FTS	*114*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C2-6:2-FTS	*98*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*
13C2-8:2-FTS	*91*		*50 - 200*	*04/26/25 12:50*	*04/28/25 00:49*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-147443-4
Date Collected: 04/21/25 10:55
Matrix: Water
Date Received: 04/24/25 09:34

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		04/26/25 12:50	04/27/25 21:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-147443-4

Date Collected: 04/21/25 10:55
Matrix: Water
Date Received: 04/24/25 09:34

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2 0		2 0		ng/L		04/26/25 12 50	04/27/25 21 23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 21:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*75*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C6 PFDA	*79*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C5 PFHxA	*90*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C4 PFHpA	*90*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C8 PFOA	*82*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C9 PFNA	*83*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C7 PFUnA	*79*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C2 PFDoA	*79*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C4 PFBA	*89*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C5 PFPeA	*85*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C3 PFBS	*97*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C3 PFHxS	*100*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C8 PFOS	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C2-4:2-FTS	*111*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C2-6:2-FTS	*97*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*
13C2-8:2-FTS	*91*		*50 - 200*	*04/26/25 12:50*	*04/27/25 21:23*	*1*

Client Sample ID: FB Moanalua Wells

Lab Sample ID: 380-147443-5

Date Collected: 04/21/25 09:26
Matrix: Water
Date Received: 04/24/25 09:34

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		04/26/25 12:50	04/27/25 17:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1

Client Sample ID: FB Moanalua Wells

Date Collected: 04/21/25 09:26
Date Received: 04/24/25 09:34

Lab Sample ID: 380-147443-5
Matrix: Water

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)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*83*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C6 PFDA	*100*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C5 PFHxA	*107*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C4 PFHpA	*104*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C8 PFOA	*99*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C9 PFNA	*104*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C7 PFUnA	*95*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C2 PFDoA	*93*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C4 PFBA	*102*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C5 PFPeA	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C3 PFBS	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C3 PFHxS	*102*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C8 PFOS	*97*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C2-4:2-FTS	*112*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C2-6:2-FTS	*99*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*
13C2-8:2-FTS	*93*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:16*	*1*

Client Sample ID: FB Halawa Wells Units 1&2

Date Collected: 04/21/25 09:57
Date Received: 04/24/25 09:34

Lab Sample ID: 380-147443-6
Matrix: Water

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		04/26/25 12:50	04/27/25 17:26	1

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

Job ID: 380-147443-1
SDG: Weekly PFAS

Client Sample ID: FB Halawa Wells Units 1&2

Date Collected: 04/21/25 09:57
Date Received: 04/24/25 09:34

Lab Sample ID: 380-147443-6

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*76*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C6 PFDA	*100*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C5 PFHxA	*101*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C4 PFHpA	*102*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C8 PFOA	*97*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C9 PFNA	*99*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C7 PFUnA	*95*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C2 PFDoA	*91*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C4 PFBA	*103*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C5 PFPeA	*100*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C3 PFBS	*100*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C3 PFHxS	*97*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C8 PFOS	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C2-4:2-FTS	*113*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*
13C2-6:2-FTS	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:26*	*1*

Client Sample ID: FB Halawa Wells Units 1&2

Lab Sample ID: 380-147443-6
Matrix: Water
Date Collected: 04/21/25 09:57
Date Received: 04/24/25 09:34

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-8:2-FTS	94		50 - 200	04/26/25 12:50	04/27/25 17:26	1

Client Sample ID: FB Aiea Gulch Wells Pump 1

Lab Sample ID: 380-147443-7
Matrix: Water
Date Collected: 04/21/25 10:32
Date Received: 04/24/25 09:34

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		04/26/25 12:50	04/27/25 17:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	72		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C6 PFDA	98		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C5 PFHxA	102		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C4 PFHpA	98		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C8 PFOA	97		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C9 PFNA	99		50 - 200	04/26/25 12:50	04/27/25 17:35	1

Client Sample ID: FB Aiea Gulch Wells Pump 1

Lab Sample ID: 380-147443-7

Date Collected: 04/21/25 10:32

Matrix: Water

Date Received: 04/24/25 09:34

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C7 PFUnA	95		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C2 PFDoA	90		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C4 PFBA	101		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C5 PFPeA	99		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C3 PFBS	96		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C3 PFHxS	98		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C8 PFOS	96		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C2-4:2-FTS	109		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C2-6:2-FTS	97		50 - 200	04/26/25 12:50	04/27/25 17:35	1
13C2-8:2-FTS	96		50 - 200	04/26/25 12:50	04/27/25 17:35	1

Client Sample ID: FB Aiea Gulch Wells Pump 2

Lab Sample ID: 380-147443-8

Date Collected: 04/21/25 10:55

Matrix: Water

Date Received: 04/24/25 09:34

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		04/26/25 12:50	04/27/25 17:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1

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

Job ID: 380-147443-1
SDG: Weekly PFAS

Client Sample ID: FB Aiea Gulch Wells Pump 2
Date Collected: 04/21/25 10:55
Date Received: 04/24/25 09:34

Lab Sample ID: 380-147443-8
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		04/26/25 12:50	04/27/25 17:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*80*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C6 PFDA	*100*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C5 PFHxA	*103*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C4 PFHpA	*106*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C8 PFOA	*99*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C9 PFNA	*101*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C7 PFUnA	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C2 PFDoA	*92*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C4 PFBA	*103*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C5 PFPeA	*101*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C3 PFBS	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C3 PFHxS	*99*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C8 PFOS	*97*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C2-4:2-FTS	*116*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C2-6:2-FTS	*100*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*
13C2-8:2-FTS	*96*		*50 - 200*	*04/26/25 12:50*	*04/27/25 17:45*	*1*

Action Limit Summary

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

Job ID: 380-147443-1
SDG: Weekly PFAS

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-147443-1

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	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

Client Sample ID: HALAWA WELLS UNITS 1&2 P1 — Lab Sample ID: 380-147443-2

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)	2.5		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 1 — Lab Sample ID: 380-147443-3

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	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

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-147443-4

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

Action Limit Summary

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

Job ID: 380-147443-1
SDG: Weekly PFAS

Client Sample ID: FB Moanalua Wells — Lab Sample ID: 380-147443-5

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

Client Sample ID: FB Halawa Wells Units 1&2 — Lab Sample ID: 380-147443-6

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

Client Sample ID: FB Aiea Gulch Wells Pump 1 — Lab Sample ID: 380-147443-7

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

Client Sample ID: FB Aiea Gulch Wells Pump 2 — Lab Sample ID: 380-147443-8

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

Surrogate Summary

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

Job ID: 380-147443-1
SDG: Weekly PFAS

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-147443-1	MOANALUA WELLS	97	107	111	85
380-147443-1 MS	MOANALUA WELLS	107	114	120	89
380-147443-1 MSD	MOANALUA WELLS	105	108	114	80
380-147443-2	HALAWA WELLS UNITS 1&2 P1	95	97	96	87
380-147443-3	AIEA GULCH WELLS PUMP 1	98	104	100	91
380-147443-4	AIEA GULCH WELLS PUMP 2	95	102	98	86
380-147443-5	FB Moanalua Wells	85	100	119	62 S1-
380-147443-6	FB Halawa Wells Units 1&2	70	89	105	57 S1-
380-147443-7	FB Aiea Gulch Wells Pump 1	76	96	111	56 S1-
380-147443-8	FB Aiea Gulch Wells Pump 2	73	90	111	55 S1-
380-147590-M-1-A MS	Matrix Spike	83	96	99	82
380-147590-N-1-A MSD	Matrix Spike Duplicate	85	103	98	88
LCS 380-149432/3-A	Lab Control Sample	94	103	118	69 S1-
LCS 380-149587/22-A	Lab Control Sample	87	97	98	82
MBL 380-149432/1-A	Method Blank	83	93	112	60 S1-
MBL 380-149587/20-A	Method Blank	91	103	99	87
MRL 380-149432/2-A	Lab Control Sample	96	113	112	75
MRL 380-149587/21-A	Lab Control Sample	88	95	98	77

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: 380-147443-1
SDG: Weekly PFAS

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

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-147443-1	MOANALUA WELLS	79	87	89	92	90	89	87	89
380-147443-2	HALAWA WELLS UNITS 1&2 P1	79	87	88	89	89	86	85	89
380-147443-3	AIEA GULCH WELLS PUMP 1	73	82	89	86	81	82	87	81
380-147443-4	AIEA GULCH WELLS PUMP 2	75	79	90	90	82	83	79	79
380-147443-4 MS	AIEA GULCH WELLS PUMP 2	66	75	84	81	78	76	78	76
380-147443-4 MSD	AIEA GULCH WELLS PUMP 2	46 *5-	39 *5-	53	54	46 *5-	44 *5-	42 *5-	48 *5-
380-147443-5	FB Moanalua Wells	83	100	107	104	99	104	95	93
380-147443-6	FB Halawa Wells Units 1&2	76	100	101	102	97	99	95	91
380-147443-7	FB Aiea Gulch Wells Pump 1	72	98	102	98	97	99	95	90
380-147443-8	FB Aiea Gulch Wells Pump 2	80	100	103	106	99	101	98	92
380-147455-B-9-A MS	Matrix Spike	91	87	97	96	88	85	88	85
380-147455-C-9-A MSD	Matrix Spike Duplicate	92	77	97	93	84	82	78	74
380-148111-B-1-A MS	Matrix Spike	86	93	93	95	98	94	92	94
380-148111-C-1-A MSD	Matrix Spike Duplicate	78	89	88	89	90	93	88	95
LCS 380-149460/24-A	Lab Control Sample	80	105	103	109	99	106	102	97
LCS 380-149464/24-A	Lab Control Sample	86	100	108	108	101	102	100	94
LCS 380-150379/22-A	Lab Control Sample	88	97	97	98	100	99	93	97
MBL 380-149460/22-A	Method Blank	72	101	107	104	100	102	94	93
MBL 380-149464/22-A	Method Blank	70	98	103	102	100	98	97	90
MBL 380-150379/20-A	Method Blank	91	95	101	105	101	99	95	95
MRL 380-149460/23-A	Lab Control Sample	63	89	91	93	87	92	87	81
MRL 380-149464/23-A	Lab Control Sample	74	95	101	101	97	98	94	87
MRL 380-150379/21-A	Lab Control Sample	88	100	99	98	101	100	96	102

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-147443-1	MOANALUA WELLS	92	93	106	105	104	123	124	105
380-147443-2	HALAWA WELLS UNITS 1&2 P1	89	90	114	112	105	121	119	105
380-147443-3	AIEA GULCH WELLS PUMP 1	85	80	98	98	98	114	98	91
380-147443-4	AIEA GULCH WELLS PUMP 2	89	85	97	100	98	111	97	91
380-147443-4 MS	AIEA GULCH WELLS PUMP 2	82	80	101	102	101	112	101	101
380-147443-4 MSD	AIEA GULCH WELLS PUMP 2	57	53	94	97	99	105	96	96
380-147443-5	FB Moanalua Wells	102	98	98	102	97	112	99	93
380-147443-6	FB Halawa Wells Units 1&2	103	100	100	97	98	113	98	94
380-147443-7	FB Aiea Gulch Wells Pump 1	101	99	96	98	96	109	97	96
380-147443-8	FB Aiea Gulch Wells Pump 2	103	101	98	99	97	116	100	96
380-147455-B-9-A MS	Matrix Spike	99	121	98	104	103	122	109	105
380-147455-C-9-A MSD	Matrix Spike Duplicate	98	116	96	98	100	117	106	102
380-148111-B-1-A MS	Matrix Spike	96	96	104	108	107	107	112	102
380-148111-C-1-A MSD	Matrix Spike Duplicate	93	90	101	102	106	110	109	101
LCS 380-149460/24-A	Lab Control Sample	102	99	101	102	101	113	101	100
LCS 380-149464/24-A	Lab Control Sample	105	103	102	100	99	108	98	95
LCS 380-150379/22-A	Lab Control Sample	102	100	104	102	105	112	108	105
MBL 380-149460/22-A	Method Blank	103	101	101	104	100	125	106	101
MBL 380-149464/22-A	Method Blank	104	101	98	98	98	112	99	93
MBL 380-150379/20-A	Method Blank	100	98	112	110	108	114	114	108
MRL 380-149460/23-A	Lab Control Sample	91	89	97	101	101	109	98	96
MRL 380-149464/23-A	Lab Control Sample	102	95	97	98	98	113	99	92

Isotope Dilution Summary

Client: City & County of Honolulu
Job ID: 380-147443-1
Project/Site: RED-HILL
SDG: Weekly PFAS

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

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
MRL 380-150379/21-A	Lab Control Sample	100	95	96	103	101	109	111	102

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

Lab Sample ID: MBL 380-149460/22-A
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 149460

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		04/26/25 12:50	04/27/25 16:17	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*72*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C6 PFDA	*101*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C5 PFHxA	*107*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C4 PFHpA	*104*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C8 PFOA	*100*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C9 PFNA	*102*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C7 PFUnA	*94*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C2 PFDoA	*93*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C4 PFBA	*103*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C5 PFPeA	*101*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C3 PFBS	*101*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*
13C3 PFHxS	*104*		*50 - 200*	*04/26/25 12:50*	*04/27/25 16:17*	*1*

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

Lab Sample ID: MBL 380-149460/22-A
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 149460

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	100		50 - 200	04/26/25 12:50	04/27/25 16:17	1
13C2-4:2-FTS	125		50 - 200	04/26/25 12:50	04/27/25 16:17	1
13C2-6:2-FTS	106		50 - 200	04/26/25 12:50	04/27/25 16:17	1
13C2-8:2-FTS	101		50 - 200	04/26/25 12:50	04/27/25 16:17	1

Lab Sample ID: LCS 380-149460/24-A
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149460

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	110		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	110		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	101		ng/L		84	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	116		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	114		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	120	112		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	120	112		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	104		ng/L		86	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	114		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	120	118		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	120	110		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	117		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	120	114		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	117		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	120	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	113		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	115		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	93.7		ng/L		78	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	119		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	110		ng/L		91	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	109		ng/L		91	70 - 130
Perfluoropentanoic acid (PFPeA)	120	112		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	118		ng/L		98	70 - 130

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

Lab Sample ID: LCS 380-149460/24-A
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149460

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			120	111		ng/L		93	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*80*		*50 - 200*
13C6 PFDA	*105*		*50 - 200*
13C5 PFHxA	*103*		*50 - 200*
13C4 PFHpA	*109*		*50 - 200*
13C8 PFOA	*99*		*50 - 200*
13C9 PFNA	*106*		*50 - 200*
13C7 PFUnA	*102*		*50 - 200*
13C2 PFDoA	*97*		*50 - 200*
13C4 PFBA	*102*		*50 - 200*
13C5 PFPeA	*99*		*50 - 200*
13C3 PFBS	*101*		*50 - 200*
13C3 PFHxS	*102*		*50 - 200*
13C8 PFOS	*101*		*50 - 200*
13C2-4:2-FTS	*113*		*50 - 200*
13C2-6:2-FTS	*101*		*50 - 200*
13C2-8:2-FTS	*100*		*50 - 200*

Lab Sample ID: MRL 380-149460/23-A
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149460

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.00	2.01	J	ng/L		100	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			2.00	1.93	J	ng/L		97	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			2.00	1.87	J	ng/L		93	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			2.00	2.06	J	ng/L		103	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			2.00	2.10	J	ng/L		105	50 - 150		
Perfluorodecanoic acid (PFDA)			2.00	1.98	J	ng/L		99	50 - 150		
Perfluorododecanoic acid (PFDoA)			2.00	2.17	J	ng/L		108	50 - 150		
Perfluoroheptanoic acid (PFHpA)			2.00	1.95	J	ng/L		97	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			2.00	2.10	J	ng/L		105	50 - 150		
Perfluorohexanoic acid (PFHxA)			2.00	2.23	J	ng/L		111	50 - 150		
Perfluorononanoic acid (PFNA)			2.00	2.03	J	ng/L		101	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			2.00	2.21	J	ng/L		110	50 - 150		
Perfluorooctanoic acid (PFOA)			2.00	2.15	J	ng/L		107	50 - 150		
Perfluoroundecanoic acid (PFUnA)			2.00	2.13	J	ng/L		107	50 - 150		
Perfluorobutanoic acid (PFBA)			2.00	2.13	J	ng/L		106	50 - 150		

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

Lab Sample ID: MRL 380-149460/23-A
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149460

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.21	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.20	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.38	J	ng/L		119	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.91	J	ng/L		95	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.88	J	ng/L		94	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.05	J	ng/L		102	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*63*		*50 - 200*
13C6 PFDA	*89*		*50 - 200*
13C5 PFHxA	*91*		*50 - 200*
13C4 PFHpA	*93*		*50 - 200*
13C8 PFOA	*87*		*50 - 200*
13C9 PFNA	*92*		*50 - 200*
13C7 PFUnA	*87*		*50 - 200*
13C2 PFDoA	*81*		*50 - 200*
13C4 PFBA	*91*		*50 - 200*
13C5 PFPeA	*89*		*50 - 200*
13C3 PFBS	*97*		*50 - 200*
13C3 PFHxS	*101*		*50 - 200*
13C8 PFOS	*101*		*50 - 200*
13C2-4:2-FTS	*109*		*50 - 200*
13C2-6:2-FTS	*98*		*50 - 200*
13C2-8:2-FTS	*96*		*50 - 200*

Lab Sample ID: 380-147455-B-9-A MS
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 149460

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	103		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	107		ng/L		88	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	103		ng/L		85	70 - 130

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

Lab Sample ID: 380-147455-B-9-A MS
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 149460

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		121	110		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	117		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	109		ng/L		90	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	113		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	108		ng/L		89	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	109		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	115		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	112		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	114		ng/L		93	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	116		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	117		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	117		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	115		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	100		ng/L		83	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	123		ng/L		102	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	127		ng/L		105	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	108		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	108		ng/L		89	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	112		ng/L		93	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	113		ng/L		93	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*91*		*50 - 200*
13C6 PFDA	*87*		*50 - 200*
13C5 PFHxA	*97*		*50 - 200*
13C4 PFHpA	*96*		*50 - 200*
13C8 PFOA	*88*		*50 - 200*
13C9 PFNA	*85*		*50 - 200*
13C7 PFUnA	*88*		*50 - 200*
13C2 PFDoA	*85*		*50 - 200*
13C4 PFBA	*99*		*50 - 200*
13C5 PFPeA	*121*		*50 - 200*
13C3 PFBS	*98*		*50 - 200*
13C3 PFHxS	*104*		*50 - 200*
13C8 PFOS	*103*		*50 - 200*

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

Lab Sample ID: 380-147455-B-9-A MS
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 149460

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	122		50 - 200
13C2-6:2-FTS	109		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: 380-147455-C-9-A MSD
Matrix: Water
Analysis Batch: 149502

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 149460

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	106		ng/L		87	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	106		ng/L		87	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	104		ng/L		86	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	110		ng/L		91	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	117		ng/L		96	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		121	110		ng/L		91	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	116		ng/L		96	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	109		ng/L		90	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	115		ng/L		94	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	<2.0		121	116		ng/L		96	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		121	109		ng/L		90	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	116		ng/L		95	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		121	112		ng/L		92	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	116		ng/L		96	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		121	117		ng/L		95	70 - 130	0	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	115		ng/L		95	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	115		ng/L		95	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	117		ng/L		97	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	99.3		ng/L		82	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	121		ng/L		100	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	128		ng/L		106	70 - 130	0	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	109		ng/L		90	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		121	115		ng/L		94	70 - 130	6	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	114		ng/L		95	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	114		ng/L		94	70 - 130	1	30

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	92		50 - 200
13C6 PFDA	77		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	93		50 - 200
13C8 PFOA	84		50 - 200
13C9 PFNA	82		50 - 200
13C7 PFUnA	78		50 - 200
13C2 PFDoA	74		50 - 200
13C4 PFBA	98		50 - 200
13C5 PFPeA	116		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	98		50 - 200
13C8 PFOS	100		50 - 200
13C2-4:2-FTS	117		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	102		50 - 200

Lab Sample ID: MBL 380-149464/22-A
Matrix: Water
Analysis Batch: 149506

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 149464

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1

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

Lab Sample ID: MBL 380-149464/22-A
Matrix: Water
Analysis Batch: 149506

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 149464

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		04/26/25 12:50	04/27/25 20:53	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*70*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C6 PFDA	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C5 PFHxA	*103*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C4 PFHpA	*102*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C8 PFOA	*100*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C9 PFNA	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C7 PFUnA	*97*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C2 PFDoA	*90*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C4 PFBA	*104*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C5 PFPeA	*101*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C3 PFBS	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C3 PFHxS	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C8 PFOS	*98*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C2-4:2-FTS	*112*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C2-6:2-FTS	*99*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*
13C2-8:2-FTS	*93*		*50 - 200*	*04/26/25 12:50*	*04/27/25 20:53*	*1*

Lab Sample ID: LCS 380-149464/24-A
Matrix: Water
Analysis Batch: 149506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149464

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			120	110		ng/L		91	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			120	113		ng/L		94	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	113		ng/L		94	70 - 130		
Perfluorodecanoic acid (PFDA)			120	112		ng/L		93	70 - 130		
Perfluorododecanoic acid (PFDoA)			120	115		ng/L		95	70 - 130		
Perfluoroheptanoic acid (PFHpA)			120	108		ng/L		90	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			120	114		ng/L		95	70 - 130		
Perfluorohexanoic acid (PFHxA)			120	110		ng/L		91	70 - 130		
Perfluorononanoic acid (PFNA)			120	114		ng/L		95	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			120	115		ng/L		96	70 - 130		
Perfluorooctanoic acid (PFOA)			120	115		ng/L		95	70 - 130		

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

Lab Sample ID: LCS 380-149464/24-A
Matrix: Water
Analysis Batch: 149506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	120	117		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	120	114		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	116		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	114		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	101		ng/L		84	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	113		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	115		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	115		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	120	112		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	118		ng/L		98	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	115		ng/L		95	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*86*		*50 - 200*
13C6 PFDA	*100*		*50 - 200*
13C5 PFHxA	*108*		*50 - 200*
13C4 PFHpA	*108*		*50 - 200*
13C8 PFOA	*101*		*50 - 200*
13C9 PFNA	*102*		*50 - 200*
13C7 PFUnA	*100*		*50 - 200*
13C2 PFDoA	*94*		*50 - 200*
13C4 PFBA	*105*		*50 - 200*
13C5 PFPeA	*103*		*50 - 200*
13C3 PFBS	*102*		*50 - 200*
13C3 PFHxS	*100*		*50 - 200*
13C8 PFOS	*99*		*50 - 200*
13C2-4:2-FTS	*108*		*50 - 200*
13C2-6:2-FTS	*98*		*50 - 200*
13C2-8:2-FTS	*95*		*50 - 200*

Lab Sample ID: MRL 380-149464/23-A
Matrix: Water
Analysis Batch: 149506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149464

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.01	J	ng/L		100	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.85	J	ng/L		93	50 - 150

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

Lab Sample ID: MRL 380-149464/23-A
Matrix: Water
Analysis Batch: 149506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149464

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
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	2.12	J	ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.13	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.23	J	ng/L		112	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.15	J	ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.22	J	ng/L		111	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.19	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.15	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.37	J	ng/L		119	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.91	J	ng/L		96	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.01	J	ng/L		100	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.23	J	ng/L		112	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.95	J	ng/L		98	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.10	J	ng/L		105	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*74*		*50 - 200*
13C6 PFDA	*95*		*50 - 200*
13C5 PFHxA	*101*		*50 - 200*
13C4 PFHpA	*101*		*50 - 200*
13C8 PFOA	*97*		*50 - 200*
13C9 PFNA	*98*		*50 - 200*
13C7 PFUnA	*94*		*50 - 200*
13C2 PFDoA	*87*		*50 - 200*
13C4 PFBA	*102*		*50 - 200*
13C5 PFPeA	*95*		*50 - 200*
13C3 PFBS	*97*		*50 - 200*
13C3 PFHxS	*98*		*50 - 200*

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

Lab Sample ID: MRL 380-149464/23-A
Matrix: Water
Analysis Batch: 149506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 149464

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C8 PFOS	98		50 - 200
13C2-4:2-FTS	113		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	92		50 - 200

Lab Sample ID: 380-147443-4 MS
Matrix: Water
Analysis Batch: 149506

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 149464

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	108		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	108		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	104		ng/L		86	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	112		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	114		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	113		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	112		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	108		ng/L		89	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	113		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	113		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	111		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	116		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	115		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	116		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	120		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	118		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	88.8		ng/L		74	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	121		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	107		ng/L		89	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	111		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	115		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	121		ng/L		100	70 - 130

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

Lab Sample ID: 380-147443-4 MS
Matrix: Water
Analysis Batch: 149506

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 149464

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	112		ng/L		93	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*66*		*50 - 200*
13C6 PFDA	*75*		*50 - 200*
13C5 PFHxA	*84*		*50 - 200*
13C4 PFHpA	*81*		*50 - 200*
13C8 PFOA	*78*		*50 - 200*
13C9 PFNA	*76*		*50 - 200*
13C7 PFUnA	*78*		*50 - 200*
13C2 PFDoA	*76*		*50 - 200*
13C4 PFBA	*82*		*50 - 200*
13C5 PFPeA	*80*		*50 - 200*
13C3 PFBS	*101*		*50 - 200*
13C3 PFHxS	*102*		*50 - 200*
13C8 PFOS	*101*		*50 - 200*
13C2-4:2-FTS	*112*		*50 - 200*
13C2-6:2-FTS	*101*		*50 - 200*
13C2-8:2-FTS	*101*		*50 - 200*

Lab Sample ID: 380-147443-4 MSD
Matrix: Water
Analysis Batch: 149506

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 149464

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	106		ng/L		88	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	106		ng/L		88	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	104		ng/L		87	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	113	*5-	ng/L		94	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	119		ng/L		98	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		120	114	*5-	ng/L		94	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	113	*5-	ng/L		94	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	111		ng/L		92	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	117		ng/L		97	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	123		ng/L		101	70 - 130	9	30
Perfluorononanoic acid (PFNA)	<2.0		120	114	*5-	ng/L		94	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	118		ng/L		98	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		120	117	*5-	ng/L		97	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	118	*5-	ng/L		98	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		120	116		ng/L		96	70 - 130	1	30

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

Lab Sample ID: 380-147443-4 MSD
Matrix: Water
Analysis Batch: 149506

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 149464

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	123		ng/L		102	70 - 130	8	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	120		ng/L		99	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	117		ng/L		97	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	91.0		ng/L		76	70 - 130	2	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	125		ng/L		104	70 - 130	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	106		ng/L		88	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	106		ng/L		88	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	110		ng/L		90	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	113		ng/L		94	70 - 130	7	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	116		ng/L		96	70 - 130	3	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*46*	*5-	*50 - 200*
13C6 PFDA	*39*	*5-	*50 - 200*
13C5 PFHxA	*53*		*50 - 200*
13C4 PFHpA	*54*		*50 - 200*
13C8 PFOA	*46*	*5-	*50 - 200*
13C9 PFNA	*44*	*5-	*50 - 200*
13C7 PFUnA	*42*	*5-	*50 - 200*
13C2 PFDoA	*48*	*5-	*50 - 200*
13C4 PFBA	*57*		*50 - 200*
13C5 PFPeA	*53*		*50 - 200*
13C3 PFBS	*94*		*50 - 200*
13C3 PFHxS	*97*		*50 - 200*
13C8 PFOS	*99*		*50 - 200*
13C2-4:2-FTS	*105*		*50 - 200*
13C2-6:2-FTS	*96*		*50 - 200*
13C2-8:2-FTS	*96*		*50 - 200*

Lab Sample ID: MBL 380-150379/20-A
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 150379

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1

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

Lab Sample ID: MBL 380-150379/20-A
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 150379

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		05/02/25 07:12	05/02/25 21:46	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*91*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C6 PFDA	*95*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C5 PFHxA	*101*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C4 PFHpA	*105*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C8 PFOA	*101*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C9 PFNA	*99*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C7 PFUnA	*95*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C2 PFDoA	*95*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C4 PFBA	*100*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C5 PFPeA	*98*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C3 PFBS	*112*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C3 PFHxS	*110*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C8 PFOS	*108*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C2-4:2-FTS	*114*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C2-6:2-FTS	*114*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*
13C2-8:2-FTS	*108*		*50 - 200*	*05/02/25 07:12*	*05/02/25 21:46*	*1*

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

Lab Sample ID: LCS 380-150379/22-A
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 150379

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.0	60.0		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.0	59.5		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.0	60.0		ng/L		100	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.0	64.8		ng/L		108	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.0	59.9		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	60.0	61.2		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	60.0	62.4		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.0	62.8		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.0	60.6		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	60.0	66.5		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	60.0	60.5		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.0	57.3		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	60.0	60.9		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.0	62.9		ng/L		105	70 - 130
Perfluorobutanoic acid (PFBA)	60.0	62.5		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.0	65.0		ng/L		108	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.0	63.0		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.0	62.7		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.0	58.5		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.0	50.1		ng/L		83	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.0	64.7		ng/L		108	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.0	62.1		ng/L		104	70 - 130
Perfluoropentanoic acid (PFPeA)	60.0	61.4		ng/L		102	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.0	61.2		ng/L		102	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.0	61.3		ng/L		102	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*88*		*50 - 200*
13C6 PFDA	*97*		*50 - 200*
13C5 PFHxA	*97*		*50 - 200*
13C4 PFHpA	*98*		*50 - 200*
13C8 PFOA	*100*		*50 - 200*
13C9 PFNA	*99*		*50 - 200*

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

Lab Sample ID: LCS 380-150379/22-A
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 150379

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C7 PFUnA	93		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	102		50 - 200
13C5 PFPeA	100		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	102		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	108		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: MRL 380-150379/21-A
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 150379

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.25	J	ng/L		112	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.03	J	ng/L		101	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.21	J	ng/L		110	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.21	J	ng/L		110	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.28	J	ng/L		114	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	2.28	J	ng/L		114	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.32	J	ng/L		116	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.44	J	ng/L		122	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.31	J	ng/L		115	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.35	J	ng/L		117	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	1.75	J	ng/L		87	50 - 150

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

Lab Sample ID: MRL 380-150379/21-A
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 150379

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoro-3-methoxypropanoic acid (PFMPA)			2.00	2.19	J	ng/L		109	50 - 150		
Perfluoro-4-methoxybutanoic acid (PFMBA)			2.00	2.13	J	ng/L		106	50 - 150		
Perfluoropentanoic acid (PFPeA)			2.00	2.13	J	ng/L		106	50 - 150		
Perfluoroheptanesulfonic acid (PFHpS)			2 00	2 08	J	ng/L		104	50 - 150		
Perfluoropentanesulfonic acid (PFPeS)			2.00	2.09	J	ng/L		104	50 - 150		

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*88*		*50 - 200*
13C6 PFDA	*100*		*50 - 200*
13C5 PFHxA	*99*		*50 - 200*
13C4 PFHpA	*98*		*50 - 200*
13C8 PFOA	*101*		*50 - 200*
13C9 PFNA	*100*		*50 - 200*
13C7 PFUnA	*96*		*50 - 200*
13C2 PFDoA	*102*		*50 - 200*
13C4 PFBA	*100*		*50 - 200*
13C5 PFPeA	*95*		*50 - 200*
13C3 PFBS	*96*		*50 - 200*
13C3 PFHxS	*103*		*50 - 200*
13C8 PFOS	*101*		*50 - 200*
13C2-4:2-FTS	*109*		*50 - 200*
13C2-6:2-FTS	*111*		*50 - 200*
13C2-8:2-FTS	*102*		*50 - 200*

Lab Sample ID: 380-148111-B-1-A MS
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 150379

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	57.1		ng/L		95	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	57.8		ng/L		96	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	60.4		ng/L		100	70 - 130		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	63.5		ng/L		105	70 - 130		
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	59.8		ng/L		99	70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		60.2	63.3		ng/L		105	70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	63.5		ng/L		105	70 - 130		
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	65.5		ng/L		109	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	62.2		ng/L		103	70 - 130		
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	65.3		ng/L		108	70 - 130		

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

Lab Sample ID: 380-148111-B-1-A MS
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 150379

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	<2.0		60.2	62.7		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	58.4		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	63.6		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	65.9		ng/L		109	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	65.0		ng/L		108	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	66.4		ng/L		110	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	64.9		ng/L		108	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	67.6		ng/L		112	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	60.2		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	55.8		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	62.4		ng/L		104	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	62.1		ng/L		103	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	62.2		ng/L		103	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	64.3		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	60.4		ng/L		100	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*86*		*50 - 200*
13C6 PFDA	*93*		*50 - 200*
13C5 PFHxA	*93*		*50 - 200*
13C4 PFHpA	*95*		*50 - 200*
13C8 PFOA	*98*		*50 - 200*
13C9 PFNA	*94*		*50 - 200*
13C7 PFUnA	*92*		*50 - 200*
13C2 PFDoA	*94*		*50 - 200*
13C4 PFBA	*96*		*50 - 200*
13C5 PFPeA	*96*		*50 - 200*
13C3 PFBS	*104*		*50 - 200*
13C3 PFHxS	*108*		*50 - 200*
13C8 PFOS	*107*		*50 - 200*
13C2-4:2-FTS	*107*		*50 - 200*
13C2-6:2-FTS	*112*		*50 - 200*
13C2-8:2-FTS	*102*		*50 - 200*

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

Lab Sample ID: 380-148111-C-1-A MSD
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 150379

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	61.2		ng/L		102	70 - 130	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	59.9		ng/L		100	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	61.6		ng/L		102	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	69.3		ng/L		115	70 - 130	9	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.1	60.7		ng/L		101	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		60.1	66.5		ng/L		111	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	62.3		ng/L		104	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	63.1		ng/L		105	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.1	61.7		ng/L		103	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	67.6		ng/L		112	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		60.1	62.7		ng/L		104	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.1	57.6		ng/L		96	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		60.1	65.2		ng/L		109	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	66.0		ng/L		110	70 - 130	0	30
Perfluorobutanoic acid (PFBA)	<2.0		60.1	64.0		ng/L		106	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	66.5		ng/L		111	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	63.3		ng/L		105	70 - 130	2	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	66.9		ng/L		111	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	61.2		ng/L		102	70 - 130	2	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.1	56.5		ng/L		94	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	63.7		ng/L		106	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	63.5		ng/L		106	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	63.4		ng/L		106	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	62.5		ng/L		104	70 - 130	3	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	63.4		ng/L		106	70 - 130	5	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*78*		*50 - 200*
13C6 PFDA	*89*		*50 - 200*
13C5 PFHxA	*88*		*50 - 200*
13C4 PFHpA	*89*		*50 - 200*
13C8 PFOA	*90*		*50 - 200*
13C9 PFNA	*93*		*50 - 200*

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

Lab Sample ID: 380-148111-C-1-A MSD
Matrix: Water
Analysis Batch: 150517

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 150379

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C7 PFUnA	88		50 - 200
13C2 PFDoA	95		50 - 200
13C4 PFBA	93		50 - 200
13C5 PFPeA	90		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	102		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	109		50 - 200
13C2-8:2-FTS	101		50 - 200

LCMS

Prep Batch: 149460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-147443-5	FB Moanalua Wells	Total/NA	Water	533	
380-147443-6	FB Halawa Wells Units 1&2	Total/NA	Water	533	
380-147443-7	FB Aiea Gulch Wells Pump 1	Total/NA	Water	533	
380-147443-8	FB Aiea Gulch Wells Pump 2	Total/NA	Water	533	
MBL 380-149460/22-A	Method Blank	Total/NA	Water	533	
LCS 380-149460/24-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-149460/23-A	Lab Control Sample	Total/NA	Water	533	
380-147455-B-9-A MS	Matrix Spike	Total/NA	Water	533	
380-147455-C-9-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 149464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-147443-3	AIEA GULCH WELLS PUMP 1	Total/NA	Water	533	
380-147443-4	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
MBL 380-149464/22-A	Method Blank	Total/NA	Water	533	
LCS 380-149464/24-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-149464/23-A	Lab Control Sample	Total/NA	Water	533	
380-147443-4 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-147443-4 MSD	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	

Analysis Batch: 149502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-147443-5	FB Moanalua Wells	Total/NA	Water	533	149460
380-147443-6	FB Halawa Wells Units 1&2	Total/NA	Water	533	149460
380-147443-7	FB Aiea Gulch Wells Pump 1	Total/NA	Water	533	149460
380-147443-8	FB Aiea Gulch Wells Pump 2	Total/NA	Water	533	149460
MBL 380-149460/22-A	Method Blank	Total/NA	Water	533	149460
LCS 380-149460/24-A	Lab Control Sample	Total/NA	Water	533	149460
MRL 380-149460/23-A	Lab Control Sample	Total/NA	Water	533	149460
380-147455-B-9-A MS	Matrix Spike	Total/NA	Water	533	149460
380-147455-C-9-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	149460

Analysis Batch: 149506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-147443-3	AIEA GULCH WELLS PUMP 1	Total/NA	Water	533	149464
380-147443-4	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	149464
MBL 380-149464/22-A	Method Blank	Total/NA	Water	533	149464
LCS 380-149464/24-A	Lab Control Sample	Total/NA	Water	533	149464
MRL 380-149464/23-A	Lab Control Sample	Total/NA	Water	533	149464
380-147443-4 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	149464
380-147443-4 MSD	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	149464

Prep Batch: 150379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-147443-1	MOANALUA WELLS	Total/NA	Water	533	
380-147443-2	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	
MBL 380-150379/20-A	Method Blank	Total/NA	Water	533	
LCS 380-150379/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-150379/21-A	Lab Control Sample	Total/NA	Water	533	
380-148111-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-148111-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

QC Association Summary

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

Job ID: 380-147443-1
SDG: Weekly PFAS

LCMS

Analysis Batch: 150517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-147443-1	MOANALUA WELLS	Total/NA	Water	533	150379
380-147443-2	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	150379
MBL 380-150379/20-A	Method Blank	Total/NA	Water	533	150379
LCS 380-150379/22-A	Lab Control Sample	Total/NA	Water	533	150379
MRL 380-150379/21-A	Lab Control Sample	Total/NA	Water	533	150379
380-148111-B-1-A MS	Matrix Spike	Total/NA	Water	533	150379
380-148111-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	150379

Lab Chronicle

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

Job ID: 380-147443-1
SDG: Weekly PFAS

Client Sample ID: MOANALUA WELLS
Lab Sample ID: 380-147443-1
Date Collected: 04/21/25 09:26
Matrix: Water
Date Received: 04/24/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			150379	XTD8	EA POM	05/02/25 07:12
Total/NA	Analysis	533		1	150517	Y5FM	EA POM	05/02/25 23:12

Client Sample ID: HALAWA WELLS UNITS 1&2 P1
Lab Sample ID: 380-147443-2
Date Collected: 04/21/25 09:57
Matrix: Water
Date Received: 04/24/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			150379	XTD8	EA POM	05/02/25 07:12
Total/NA	Analysis	533		1	150517	Y5FM	EA POM	05/02/25 23:23

Client Sample ID: AIEA GULCH WELLS PUMP 1
Lab Sample ID: 380-147443-3
Date Collected: 04/21/25 10:32
Matrix: Water
Date Received: 04/24/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			149464	E9PK	EA POM	04/26/25 12:50
Total/NA	Analysis	533		1	149506	M7ML	EA POM	04/28/25 00:49

Client Sample ID: AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-147443-4
Date Collected: 04/21/25 10:55
Matrix: Water
Date Received: 04/24/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			149464	E9PK	EA POM	04/26/25 12:50
Total/NA	Analysis	533		1	149506	M7ML	EA POM	04/27/25 21:23

Client Sample ID: FB Moanalua Wells
Lab Sample ID: 380-147443-5
Date Collected: 04/21/25 09:26
Matrix: Water
Date Received: 04/24/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			149460	E9PK	EA POM	04/26/25 12:50
Total/NA	Analysis	533		1	149502	SZ9R	EA POM	04/27/25 17:16

Client Sample ID: FB Halawa Wells Units 1&2
Lab Sample ID: 380-147443-6
Date Collected: 04/21/25 09:57
Matrix: Water
Date Received: 04/24/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			149460	E9PK	EA POM	04/26/25 12:50
Total/NA	Analysis	533		1	149502	SZ9R	EA POM	04/27/25 17:26

Lab Chronicle

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

Job ID: 380-147443-1
SDG: Weekly PFAS

Client Sample ID: FB Aiea Gulch Wells Pump 1

Lab Sample ID: 380-147443-7

Date Collected: 04/21/25 10:32

Matrix: Water

Date Received: 04/24/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			149460	E9PK	EA POM	04/26/25 12:50
Total/NA	Analysis	533		1	149502	SZ9R	EA POM	04/27/25 17:35

Client Sample ID: FB Aiea Gulch Wells Pump 2

Lab Sample ID: 380-147443-8

Date Collected: 04/21/25 10:55

Matrix: Water

Date Received: 04/24/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			149460	E9PK	EA POM	04/26/25 12:50
Total/NA	Analysis	533		1	149502	SZ9R	EA POM	04/27/25 17:45

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: 380-147443-1
SDG: Weekly PFAS

Laboratory: Eurofins Eaton Analytical Pomona

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

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

Method Summary

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

Job ID: 380-147443-1
SDG: Weekly PFAS

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated 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: 380-147443-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-147443-1	MOANALUA WELLS	Water	04/21/25 09:26	04/24/25 09:34
380-147443-2	HALAWA WELLS UNITS 1&2 P1	Water	04/21/25 09:57	04/24/25 09:34
380-147443-3	AIEA GULCH WELLS PUMP 1	Water	04/21/25 10:32	04/24/25 09:34
380-147443-4	AIEA GULCH WELLS PUMP 2	Water	04/21/25 10:55	04/24/25 09:34
380-147443-5	FB Moanalua Wells	Water	04/21/25 09:26	04/24/25 09:34
380-147443-6	FB Halawa Wells Units 1&2	Water	04/21/25 09:57	04/24/25 09:34
380-147443-7	FB Aiea Gulch Wells Pump 1	Water	04/21/25 10:32	04/24/25 09:34
380-147443-8	FB Aiea Gulch Wells Pump 2	Water	04/21/25 10:55	04/24/25 09:34

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

Chain of Custody Record

eurofins | Env Am

380-147443 COC

Client Information	Sampler: bailey	Lab PM: Arada Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757 2
Client Contact: kirk Iwamoto	Phone: +1 808 748 5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI 96843	Compliance Project: Δ No			
Phone: 808-748-5840 (tel)	PO #: C20525101 exp 05312023			
Email: kiwamoto@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS HNL Ranges C10-C24/C24-C36/C8-C18	525.2_PREC (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 All Analytes	Total Number of containers	Special Instructions/Note
			Preservation Code:		X	X	R	A	Q	QA	Y	I		
Moanalua Wells	21-Apr-2025	0926	G	Water							3	3		chlorinated
Halawa Wells Units 1&2 DI	21-Apr-2025	0957	G	Water							3	3		
Aiea Gulch Wells Pump 1	21-Apr-2025	1032	G	Water							3	3		chlorinated
Aiea Gulch Wells Pump 2	21-Apr-2025	1055	G	Water							3	3		chlorinated
FB Moanalua Wells	21-Apr-2025	0926									1	1		
FB Halawa Wells Units 1&2	21-Apr-2025	0957									1	1		
FB Aiea Gulch Wells Pump 1	21-Apr-2025	1032									1	1		
FB Aiea Gulch Wells Pump 2	21-Apr-2025	1055									1	1		

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

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

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by	Date	Time	Method of Shipment: FED EX 8807 3047 5033
[redacted]	Date/Time: 22Apr2025 1400	Company: HBWS	Received by:	Date/Time: 04/24/25 09:34	Company: EEAP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No

Cooler Temperature(s) °C and Other Remarks: 957N 1.7°-0.0°=1.7° GEL-FROZEN

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-147443-1
SDG Number: Weekly PFAS

Login Number: 147443
List Number: 1
Creator: Edrosa, Rey

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
ClO4 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	