eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 8/11/2026 4:44:31 PM

JOB DESCRIPTION

RED-HILL
PFAS: Moanalua Wells

JOB NUMBER

380-229226-1

Eurofins Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

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 Drinking Water and Wastewater West, 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: 380-229226-1
SDG: PFAS: Moanalua Wells

Qualifiers

LCMS

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

Glossary

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

Job Narrative
380-229226-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 8/5/2026 9:51 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 2.8°C.

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

Detection Summary

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

Client Sample ID: MOANALUA WELLS (331-223-TP202) — Lab Sample ID: 380-229226-1

No Detections.

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202) — Lab Sample ID: 380-229226-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Date Collected: 08/03/26 10:03
Date Received: 08/05/26 09:51

Lab Sample ID: 380-229226-1
Matrix: Drinking 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		08/08/26 14:45	08/10/26 01:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*95*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C6 PFDA	*89*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C5 PFHxA	*100*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C4 PFHpA	*97*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C8 PFOA	*101*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C9 PFNA	*102*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C7 PFUnA	*98*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C2 PFDoA	*88*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C4 PFBA	*118*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C5 PFPeA	*110*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C3 PFBS	*112*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C3 PFHxS	*117*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C8 PFOS	*114*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-229226-1

Date Collected: 08/03/26 10:03
Matrix: Drinking Water
Date Received: 08/05/26 09:51

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	*128*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C2-6:2-FTS	*114*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*
13C2-8:2-FTS	*104*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:23*	*1*

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*103*		*70 - 130*	*08/07/26 07:00*	*08/09/26 17:13*	*1*
13C2 PFHxA	*104*		*70 - 130*	*08/07/26 07:00*	*08/09/26 17:13*	*1*
13C2 PFDA	*103*		*70 - 130*	*08/07/26 07:00*	*08/09/26 17:13*	*1*
13C3-GenX	*99*		*70 - 130*	*08/07/26 07:00*	*08/09/26 17:13*	*1*

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

Lab Sample ID: 380-229226-2

Date Collected: 08/03/26 10:03
Matrix: Water
Date Received: 08/05/26 09:51

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		08/08/26 14:45	08/10/26 01:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202)
Date Collected: 08/03/26 10:03
Date Received: 08/05/26 09:51

Lab Sample ID: 380-229226-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		08/08/26 14:45	08/10/26 01:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*78*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C6 PFDA	*75*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C5 PFHxA	*85*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C4 PFHpA	*84*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C8 PFOA	*80*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C9 PFNA	*83*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C7 PFUnA	*87*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C2 PFDoA	*80*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C4 PFBA	*104*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C5 PFPeA	*96*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C3 PFBS	*112*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C3 PFHxS	*116*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C8 PFOS	*116*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C2-4:2-FTS	*130*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C2-6:2-FTS	*110*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*
13C2-8:2-FTS	*114*		*50 - 200*	*08/08/26 14:45*	*08/10/26 01:43*	*1*

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202)
Date Collected: 08/03/26 10:03
Date Received: 08/05/26 09:51

Lab Sample ID: 380-229226-2
Matrix: Water

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		08/07/26 07:00	08/09/26 17:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*98*		*70 - 130*	*08/07/26 07:00*	*08/09/26 17:22*	*1*
13C2 PFHxA	*104*		*70 - 130*	*08/07/26 07:00*	*08/09/26 17:22*	*1*
13C2 PFDA	*104*		*70 - 130*	*08/07/26 07:00*	*08/09/26 17:22*	*1*
13C3-GenX	*99*		*70 - 130*	*08/07/26 07:00*	*08/09/26 17:22*	*1*

Action Limit Summary

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

Client Sample ID: MOANALUA WELLS (331-223-TP202) — Lab Sample ID: 380-229226-1

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	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Client Sample ID: FB: MOANALUA WELLS (331-223-TP202) — Lab Sample ID: 380-229226-2

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	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Surrogate Summary

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Matrix: Drinking 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)
380-229226-1	MOANALUA WELLS (331-223-TP2(	103	104	103	99

Surrogate Legend

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

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

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)
380-229223-E-1-A MS	Matrix Spike	104	105	105	107
380-229223-F-1-A MSD	Matrix Spike Duplicate	99	108	107	105
380-229226-2	FB: MOANALUA WELLS (331-223-TP202)	98	104	104	99
LCS 380-245027/21-A	Lab Control Sample	97	107	105	101
MBL 380-245027/19-A	Method Blank	95	107	109	104
MRL 380-245027/20-A	Lab Control Sample	96	104	105	98

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: 380-229226-1
SDG: PFAS: Moanalua Wells

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA	C6PFDA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	13C7PUA	PFDoA
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-229226-1	MOANALUA WELLS (331-223-TP2(	95	89	100	97	101	102	98	88

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	C3PFBS	C3PFHS	C8PFOS	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-229226-1	MOANALUA WELLS (331-223-TP2(	118	110	112	117	114	128	114	104

Surrogate Legend

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

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA	C6PFDA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	13C7PUA	PFDoA
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-229226-2	FB: MOANALUA WELLS (331-223-1	78	75	85	84	80	83	87	80
380-229426-M-1-A MS	Matrix Spike	105	102	108	103	107	114	113	119
380-229426-N-1-A MSD	Matrix Spike Duplicate	104	100	106	102	103	110	105	111
LCS 380-245256/21-A	Lab Control Sample	96	90	93	98	92	98	107	96
MBL 380-245256/19-A	Method Blank	90	91	95	101	99	99	110	95
MRL 380-245256/20-A	Lab Control Sample	82	89	89	93	94	97	105	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	C3PFBS	C3PFHS	C8PFOS	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-229226-2	FB: MOANALUA WELLS (331-223-1	104	96	112	116	116	130	110	114
380-229426-M-1-A MS	Matrix Spike	104	90	103	107	111	128	123	111
380-229426-N-1-A MSD	Matrix Spike Duplicate	106	90	108	109	111	132	133	118
LCS 380-245256/21-A	Lab Control Sample	109	102	112	113	112	122	114	108
MBL 380-245256/19-A	Method Blank	109	106	108	116	114	117	112	103
MRL 380-245256/20-A	Lab Control Sample	107	99	110	115	115	121	113	110

Surrogate Legend

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

Isotope Dilution Summary

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

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 380-245256/19-A
Matrix: Water
Analysis Batch: 245291

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245256

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluorononanoic acid (PFNA)	<0.39		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.24		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0		ng/L		08/08/26 14:45	08/09/26 23:10	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*90*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C6 PFDA	*91*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C5 PFHxA	*95*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C4 PFHpA	*101*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C8 PFOA	*99*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C9 PFNA	*99*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C7 PFUnA	*110*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C2 PFDoA	*95*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C4 PFBA	*109*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C5 PFPeA	*106*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C3 PFBS	*108*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*
13C3 PFHxS	*116*		*50 - 200*	*08/08/26 14:45*	*08/09/26 23:10*	*1*

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

Lab Sample ID: MBL 380-245256/19-A
Matrix: Water
Analysis Batch: 245291

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245256

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	114		50 - 200	08/08/26 14:45	08/09/26 23:10	1
13C2-4:2-FTS	117		50 - 200	08/08/26 14:45	08/09/26 23:10	1
13C2-6:2-FTS	112		50 - 200	08/08/26 14:45	08/09/26 23:10	1
13C2-8:2-FTS	103		50 - 200	08/08/26 14:45	08/09/26 23:10	1

Lab Sample ID: LCS 380-245256/21-A
Matrix: Water
Analysis Batch: 245291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245256

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	59.1	49.7		ng/L		84	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	59.1	49.3		ng/L		84	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	59.1	53.5		ng/L		91	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.1	54.8		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.1	56.4		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	59.1	62.6		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	59.1	59.1		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.1	56.6		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.1	53.8		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	59.1	60.2		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	59.1	60.5		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.1	55.1		ng/L		93	70 - 130
Perfluorooctanoic acid (PFOA)	59.1	58.9		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	59.1	55.9		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	59.1	55.6		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.1	58.2		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.1	58.1		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.1	55.2		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	59.1	52.0		ng/L		88	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	59.1	61.0		ng/L		103	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.1	58.3		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.1	55.3		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	59.1	57.7		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.1	58.9		ng/L		100	70 - 130

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

Lab Sample ID: LCS 380-245256/21-A
Matrix: Water
Analysis Batch: 245291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245256

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			59.1	54.2		ng/L		92	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*96*		*50 - 200*
13C6 PFDA	*90*		*50 - 200*
13C5 PFHxA	*93*		*50 - 200*
13C4 PFHpA	*98*		*50 - 200*
13C8 PFOA	*92*		*50 - 200*
13C9 PFNA	*98*		*50 - 200*
13C7 PFUnA	*107*		*50 - 200*
13C2 PFDoA	*96*		*50 - 200*
13C4 PFBA	*109*		*50 - 200*
13C5 PFPeA	*102*		*50 - 200*
13C3 PFBS	*112*		*50 - 200*
13C3 PFHxS	*113*		*50 - 200*
13C8 PFOS	*112*		*50 - 200*
13C2-4:2-FTS	*122*		*50 - 200*
13C2-6:2-FTS	*114*		*50 - 200*
13C2-8:2-FTS	*108*		*50 - 200*

Lab Sample ID: MRL 380-245256/20-A
Matrix: Water
Analysis Batch: 245291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245256

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			1.97	1.77	J	ng/L		90	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			1.97	1.76	J	ng/L		89	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			1.97	1.93	J	ng/L		98	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			1.97	1.90	J	ng/L		96	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			1.97	1.95	J	ng/L		99	50 - 150		
Perfluorodecanoic acid (PFDA)			1.97	2.16	J	ng/L		110	50 - 150		
Perfluorododecanoic acid (PFDoA)			1.97	2.08	J	ng/L		105	50 - 150		
Perfluoroheptanoic acid (PFHpA)			1.97	2.18	J	ng/L		111	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			1.97	1.97	J	ng/L		100	50 - 150		
Perfluorohexanoic acid (PFHxA)			1.97	2.13	J	ng/L		108	50 - 150		
Perfluorononanoic acid (PFNA)			1.97	2.24	J	ng/L		114	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			1.97	1.96	J	ng/L		100	50 - 150		
Perfluorooctanoic acid (PFOA)			1.97	2.23	J	ng/L		113	50 - 150		
Perfluoroundecanoic acid (PFUnA)			1.97	2.09	J	ng/L		106	50 - 150		
Perfluorobutanoic acid (PFBA)			1.97	2.20	J	ng/L		112	50 - 150		

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

Lab Sample ID: MRL 380-245256/20-A
Matrix: Water
Analysis Batch: 245291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245256

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	2.26	J	ng/L		115	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	2.40	J	ng/L		122	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.26	J	ng/L		115	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	1.80	J	ng/L		91	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.97	2.09	J	ng/L		106	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	2.18	J	ng/L		111	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	1.94	J	ng/L		98	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	2.08	J	ng/L		106	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	1.97	J	ng/L		100	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	1.84	J	ng/L		93	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*82*		*50 - 200*
13C6 PFDA	*89*		*50 - 200*
13C5 PFHxA	*89*		*50 - 200*
13C4 PFHpA	*93*		*50 - 200*
13C8 PFOA	*94*		*50 - 200*
13C9 PFNA	*97*		*50 - 200*
13C7 PFUnA	*105*		*50 - 200*
13C2 PFDoA	*98*		*50 - 200*
13C4 PFBA	*107*		*50 - 200*
13C5 PFPeA	*99*		*50 - 200*
13C3 PFBS	*110*		*50 - 200*
13C3 PFHxS	*115*		*50 - 200*
13C8 PFOS	*115*		*50 - 200*
13C2-4:2-FTS	*121*		*50 - 200*
13C2-6:2-FTS	*113*		*50 - 200*
13C2-8:2-FTS	*110*		*50 - 200*

Lab Sample ID: 380-229426-M-1-A MS
Matrix: Water
Analysis Batch: 245469

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 245256

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		118	103		ng/L		87	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		118	107		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	103		ng/L		88	70 - 130

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

Lab Sample ID: 380-229426-M-1-A MS
Matrix: Water
Analysis Batch: 245469

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 245256

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		118	113		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	113		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		118	123		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		118	108		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		118	112		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	106		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		118	113		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		118	111		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	106		ng/L		89	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		118	109		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		118	106		ng/L		89	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		118	119		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	113		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	109		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	113		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		118	116		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		118	120		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	85.2		ng/L		72	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	114		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		118	114		ng/L		96	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	106		ng/L		90	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	109		ng/L		92	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*105*		*50 - 200*
13C6 PFDA	*102*		*50 - 200*
13C5 PFHxA	*108*		*50 - 200*
13C4 PFHpA	*103*		*50 - 200*
13C8 PFOA	*107*		*50 - 200*
13C9 PFNA	*114*		*50 - 200*
13C7 PFUnA	*113*		*50 - 200*
13C2 PFDoA	*119*		*50 - 200*
13C4 PFBA	*104*		*50 - 200*
13C5 PFPeA	*90*		*50 - 200*
13C3 PFBS	*103*		*50 - 200*
13C3 PFHxS	*107*		*50 - 200*
13C8 PFOS	*111*		*50 - 200*

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

Lab Sample ID: 380-229426-M-1-A MS
Matrix: Water
Analysis Batch: 245469

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 245256

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	128		50 - 200
13C2-6:2-FTS	123		50 - 200
13C2-8:2-FTS	111		50 - 200

Lab Sample ID: 380-229426-N-1-A MSD
Matrix: Water
Analysis Batch: 245469

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 245256

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		119	108		ng/L		91	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		119	108		ng/L		91	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		119	107		ng/L		90	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		119	111		ng/L		94	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		119	111		ng/L		94	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		119	117		ng/L		99	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		119	112		ng/L		94	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		119	112		ng/L		95	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		119	109		ng/L		92	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		119	112		ng/L		95	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		119	108		ng/L		91	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		119	112		ng/L		94	70 - 130	6	30
Perfluorooctanoic acid (PFOA)	<2.0		119	112		ng/L		94	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		119	111		ng/L		94	70 - 130	5	30
Perfluorobutanoic acid (PFBA)	<2.0		119	117		ng/L		99	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		119	113		ng/L		95	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		119	112		ng/L		94	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		119	115		ng/L		97	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		119	114		ng/L		97	70 - 130	2	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		119	120		ng/L		102	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		119	87.6		ng/L		74	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		119	119		ng/L		100	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	<2.0		119	114		ng/L		96	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		119	110		ng/L		93	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		119	111		ng/L		93	70 - 130	2	30

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	104		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	106		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	110		50 - 200
13C7 PFUnA	105		50 - 200
13C2 PFDoA	111		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	90		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	111		50 - 200
13C2-4:2-FTS	132		50 - 200
13C2-6:2-FTS	133		50 - 200
13C2-8:2-FTS	118		50 - 200

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Lab Sample ID: MBL 380-245027/19-A
Matrix: Water
Analysis Batch: 245287

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245027

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorononanoic acid (PFNA)	<0.39		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
Perfluorotridecanoic acid (PFTrDA)	<0.35		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0		ng/L		08/07/26 07:00	08/09/26 16:05	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	95		70 - 130	08/07/26 07:00	08/09/26 16:05	1
13C2 PFHxA	107		70 - 130	08/07/26 07:00	08/09/26 16:05	1
13C2 PFDA	109		70 - 130	08/07/26 07:00	08/09/26 16:05	1

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MBL 380-245027/19-A
Matrix: Water
Analysis Batch: 245287

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245027

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	104		70 - 130	08/07/26 07:00	08/09/26 16:05	1

Lab Sample ID: LCS 380-245027/21-A
Matrix: Water
Analysis Batch: 245287

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245027

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	49.3	46.8		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	49.3	53.3		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.3	51.4		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.3	48.1		ng/L		98	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.3	46.8		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	49.3	49.0		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	49.3	48.9		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	49.3	48.1		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	49.3	48.0		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.3	52.5		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.3	51.1		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.3	49.3		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	49.3	49.7		ng/L		101	70 - 130
Perfluorotetradecanoic acid (PFTA)	49.3	47.4		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTrDA)	49.3	50.6		ng/L		103	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	49.3	50.2		ng/L		102	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.3	49.0		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.3	47.5		ng/L		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	97		70 - 130
13C2 PFHxA	107		70 - 130
13C2 PFDA	105		70 - 130
13C3-GenX	101		70 - 130

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MRL 380-245027/20-A
Matrix: Water
Analysis Batch: 245287

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245027

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			1.97	1.98	J	ng/L		101	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			1.97	2.20	J	ng/L		112	50 - 150		
Perfluoroundecanoic acid (PFUnA)			1.97	2.18	J	ng/L		111	50 - 150		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			1.97	2.09	J	ng/L		106	50 - 150		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			1.97	2.07	J	ng/L		105	50 - 150		
Perfluorohexanoic acid (PFHxA)			1.97	2.08	J	ng/L		106	50 - 150		
Perfluorododecanoic acid (PFDoA)			1.97	2.12	J	ng/L		107	50 - 150		
Perfluorooctanoic acid (PFOA)			1.97	2.08	J	ng/L		106	50 - 150		
Perfluorodecanoic acid (PFDA)			1.97	2.11	J	ng/L		107	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			1.97	2.21	J	ng/L		112	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			1.97	2.12	J	ng/L		107	50 - 150		
Perfluoroheptanoic acid (PFHpA)			1.97	2.07	J	ng/L		105	50 - 150		
Perfluorononanoic acid (PFNA)			1.97	2.25	J	ng/L		114	50 - 150		
Perfluorotetradecanoic acid (PFTA)			1.97	2.03	J	ng/L		103	50 - 150		
Perfluorotridecanoic acid (PFTrDA)			1.97	2.16	J	ng/L		110	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			1.97	2.07	J	ng/L		105	50 - 150		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			1.97	1.99	J	ng/L		101	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			1.97	2.03	J	ng/L		103	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*96*		*70 - 130*
13C2 PFHxA	*104*		*70 - 130*
13C2 PFDA	*105*		*70 - 130*
13C3-GenX	*98*		*70 - 130*

Lab Sample ID: 380-229223-E-1-A MS
Matrix: Water
Analysis Batch: 245287

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 245027

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		24.6	24.8		ng/L		101	70 - 130		
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.6	26.4		ng/L		105	70 - 130		
Perfluoroundecanoic acid (PFUnA)	<2.0		24.6	26.2		ng/L		106	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.6	24.5		ng/L		100	70 - 130		

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-229223-E-1-A MS
Matrix: Water
Analysis Batch: 245287

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 245027

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.6	24.7		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		24.6	26.7		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		24.6	24.9		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		24.6	25.5		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		24.6	24.8		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.6	26.7		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.6	26.9		ng/L		105	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		24.6	26.4		ng/L		105	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		24.6	26.0		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		24.6	23.3		ng/L		95	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.6	26.0		ng/L		106	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.6	25.1		ng/L		102	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.6	24.8		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.6	24.9		ng/L		101	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*104*		*70 - 130*
13C2 PFHxA	*105*		*70 - 130*
13C2 PFDA	*105*		*70 - 130*
13C3-GenX	*107*		*70 - 130*

Lab Sample ID: 380-229223-F-1-A MSD
Matrix: Water
Analysis Batch: 245287

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 245027

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		24.7	25.9		ng/L		105	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.7	27.1		ng/L		107	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		24.7	27.6		ng/L		112	70 - 130	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.7	24.6		ng/L		100	70 - 130	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.7	25.5		ng/L		103	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		24.7	27.6		ng/L		106	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		24.7	27.2		ng/L		110	70 - 130	9	30
Perfluorooctanoic acid (PFOA)	<2.0		24.7	26.8		ng/L		106	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		24.7	26.0		ng/L		105	70 - 130	5	30

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-229223-F-1-A MSD
Matrix: Water
Analysis Batch: 245287

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 245027

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.7	26.7		ng/L		106	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.7	27.4		ng/L		107	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		24.7	27.4		ng/L		109	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		24.7	27.0		ng/L		110	70 - 130	4	30
Perfluorotetradecanoic acid (PFTA)	<2.0		24.7	24.9		ng/L		101	70 - 130	7	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.7	27.3		ng/L		111	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.7	25.1		ng/L		102	70 - 130	0	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.7	25.0		ng/L		101	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.7	25.7		ng/L		104	70 - 130	3	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*99*		*70 - 130*
13C2 PFHxA	*108*		*70 - 130*
13C2 PFDA	*107*		*70 - 130*
13C3-GenX	*105*		*70 - 130*

LCMS

Prep Batch: 245027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229226-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
380-229226-2	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	537.1 DW	
MBL 380-245027/19-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-245027/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-245027/20-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-229223-E-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-229223-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 245256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229226-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	
380-229226-2	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	533	
MBL 380-245256/19-A	Method Blank	Total/NA	Water	533	
LCS 380-245256/21-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-245256/20-A	Lab Control Sample	Total/NA	Water	533	
380-229426-M-1-A MS	Matrix Spike	Total/NA	Water	533	
380-229426-N-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 245287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229226-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	EPA 537.1 V2	245027
380-229226-2	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	EPA 537.1 V2	245027
MBL 380-245027/19-A	Method Blank	Total/NA	Water	EPA 537.1 V2	245027
LCS 380-245027/21-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	245027
MRL 380-245027/20-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	245027
380-229223-E-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	245027
380-229223-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	245027

Analysis Batch: 245291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229226-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	245256
380-229226-2	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	533	245256
MBL 380-245256/19-A	Method Blank	Total/NA	Water	533	245256
LCS 380-245256/21-A	Lab Control Sample	Total/NA	Water	533	245256
MRL 380-245256/20-A	Lab Control Sample	Total/NA	Water	533	245256

Analysis Batch: 245469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-229426-M-1-A MS	Matrix Spike	Total/NA	Water	533	245256
380-229426-N-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	245256

Lab Chronicle

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-229226-1

Date Collected: 08/03/26 10:03
Matrix: Drinking Water
Date Received: 08/05/26 09:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			245256	N8NE	EA POM	08/08/26 14:45
Total/NA	Analysis	533		1	245291	M7ML	EA POM	08/10/26 01:23
Total/NA	Prep	537.1 DW			245027	E9PK	EA POM	08/07/26 07:00
Total/NA	Analysis	EPA 537.1 V2		1	245287	M7ML	EA POM	08/09/26 17:13

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

Lab Sample ID: 380-229226-2

Date Collected: 08/03/26 10:03
Matrix: Water
Date Received: 08/05/26 09:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			245256	N8NE	EA POM	08/08/26 14:45
Total/NA	Analysis	533		1	245291	M7ML	EA POM	08/10/26 01:43
Total/NA	Prep	537.1 DW			245027	E9PK	EA POM	08/07/26 07:00
Total/NA	Analysis	EPA 537.1 V2		1	245287	M7ML	EA POM	08/09/26 17:22

Laboratory References:

EA POM = Eurofins 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: 380-229226-1
SDG: PFAS: Moanalua Wells

Laboratory: Eurofins Pomona

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

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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

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

Job ID: 380-229226-1
SDG: PFAS: Moanalua Wells

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
EPA 537.1 V2	EPA 537.1 Ver. 2.0 March 2020	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA POM = Eurofins 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: 380-229226-1
SDG: PFAS: Moanalua Wells

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-229226-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	08/03/26 10:03	08/05/26 09:51	Hawaii
380-229226-2	FB: MOANALUA WELLS (331-223-TP202)	Water	08/03/26 10:03	08/05/26 09:51	Hawaii

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

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: bailey	Lab PM: Lopez, Maria	Carrier Tracking No(s):	COC No:
Client Contact: kirk iwamoto	Phone: +1 808 748 5840	E-Mail: Maria.Lopez@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
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:

380-229226 COC

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 - 525 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	X	
Moanalua Wells (331-223-TP202)	3-Aug-2026	1003	G	Water							3	3		chlorinated
FB: Moanalua Wells (331-223-TP202)	3-Aug-2026	1003									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: FedEx: 875322766359
[redacted]	Date/Time: 08/05/2026 1400	Company: HBWS	Received by: Mark Maruta Date/Time: 8/5/26 951 Company: ET AR
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: (63A) 2.8+0.0-2.8 961-850767

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-229226-1
SDG Number: PFAS: Moanalua Wells

Login Number: 229226
List Number: 1
Creator: Segura, Ryan

List Source: Eurofins Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	