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 10/15/2026 3:38:32 PM

JOB DESCRIPTION

RED-HILL
PFAS: Aiea Gulch Wells Pump 1

JOB NUMBER

380-241202-1

Eurofins Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

my EOL

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
Maria Lopez, Project Manager
Maria.Lopez@et.eurofinsus.com
(626)386-1145

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 7
Action Limit Summary 11
Surrogate Summary 12
Isotope Dilution Summary 13
QC Sample Results 15
QC Association Summary 26
Lab Chronicle 27
Certification Summary 28
Method Summary 29
Sample Summary 30
Chain of Custody 31
Receipt Checklists 32

Definitions/Glossary

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

Job ID: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

Qualifiers

LCMS

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	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
380-241202-1

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 10/9/2026 9:30 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 3.0°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: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)
Lab Sample ID: 380-241202-1
PWSID Number: HI0000331

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)
Lab Sample ID: 380-241202-2
PWSID Number: HI0000331

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)
Lab Sample ID: 380-241202-1

Date Collected: 10/07/26 13:30
Matrix: Drinking Water

Date Received: 10/09/26 09:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*104*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C6 PFDA	*115*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C5 PFHxA	*108*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C4 PFHpA	*107*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C8 PFOA	*108*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C9 PFNA	*110*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C7 PFUnA	*104*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C2 PFDoA	*100*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C4 PFBA	*110*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C5 PFPeA	*108*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C3 PFBS	*103*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C3 PFHxS	*103*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)
Lab Sample ID: 380-241202-1

Date Collected: 10/07/26 13:30
Matrix: Drinking Water
Date Received: 10/09/26 09:30
PWSID Number: HI0000331

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 PFOS	*106*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C2-4:2-FTS	*89*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C2-6:2-FTS	*94*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*1*
13C2-8:2-FTS	*99*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:11*	*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		10/12/26 03:10	10/14/26 17:48	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/26 03:10	10/14/26 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*109*		*70 - 130*	*10/12/26 03:10*	*10/14/26 17:48*	*1*
13C2 PFHxA	*109*		*70 - 130*	*10/12/26 03:10*	*10/14/26 17:48*	*1*
13C2 PFDA	*111*		*70 - 130*	*10/12/26 03:10*	*10/14/26 17:48*	*1*
13C3-GenX	*105*		*70 - 130*	*10/12/26 03:10*	*10/14/26 17:48*	*1*

Client Sample ID: FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)
Lab Sample ID: 380-241202-2

Date Collected: 10/07/26 13:30
Matrix: Water
Date Received: 10/09/26 09:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/12/26 08:36	10/14/26 01:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/26 08:36	10/14/26 01:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/26 08:36	10/14/26 01:25	1

Client Sample ID: FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)
Lab Sample ID: 380-241202-2

Date Collected: 10/07/26 13:30
Matrix: Water

Date Received: 10/09/26 09:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		10/12/26 08:36	10/14/26 01:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*99*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C6 PFDA	*111*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C5 PFHxA	*106*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C4 PFHpA	*106*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C8 PFOA	*107*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C9 PFNA	*107*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C7 PFUnA	*105*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C2 PFDoA	*99*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C4 PFBA	*110*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C5 PFPeA	*112*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C3 PFBS	*107*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C3 PFHxS	*104*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C8 PFOS	*106*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C2-4:2-FTS	*95*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C2-6:2-FTS	*95*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*
13C2-8:2-FTS	*102*		*50 - 200*	*10/12/26 08:36*	*10/14/26 01:25*	*1*

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

Job ID: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

Client Sample ID: FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)
Date Collected: 10/07/26 13:30
Date Received: 10/09/26 09:30

Lab Sample ID: 380-241202-2
Matrix: Water
PWSID Number: HI0000331

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		10/12/26 03:10	10/14/26 17:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		10/12/26 03:10	10/14/26 17:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*102*		*70 - 130*	*10/12/26 03:10*	*10/14/26 17:58*	*1*
13C2 PFHxA	*104*		*70 - 130*	*10/12/26 03:10*	*10/14/26 17:58*	*1*
13C2 PFDA	*108*		*70 - 130*	*10/12/26 03:10*	*10/14/26 17:58*	*1*
13C3-GenX	*107*		*70 - 130*	*10/12/26 03:10*	*10/14/26 17:58*	*1*

Action Limit Summary

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

Job ID: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-241202-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	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 AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-241202-2

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	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: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

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)
380-241202-1	AIEA GULCH WELLS PUMP 1 (331	109	109	111	105

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)
380-241151-E-2-A MS	Matrix Spike	102	94	104	88
380-241151-F-2-A MSD	Matrix Spike Duplicate	102	106	115	102
380-241202-2	FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)	102	104	108	107
LCS 380-257859/22-A	Lab Control Sample	92	102	104	83
MBL 380-257859/20-A	Method Blank	102	100	98	94
MRL 380-257859/21-A	Lab Control Sample	97	90	95	75

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: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

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)
380-241202-1	AIEA GULCH WELLS PUMP 1 (331	104	115	108	107	108	110	104	100

		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)
380-241202-1	AIEA GULCH WELLS PUMP 1 (331	110	108	103	103	106	89	94	99

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)
380-241197-B-1-A MS	Matrix Spike	104	117	108	107	106	109	106	103
380-241197-C-1-A MSD	Matrix Spike Duplicate	103	113	108	106	107	108	105	104
380-241202-2	FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)	99	111	106	106	107	107	105	99
LCS 380-257869/22-A	Lab Control Sample	107	116	112	109	113	110	111	107
MBL 380-257869/20-A	Method Blank	99	112	105	103	104	105	103	100
MRL 380-257869/21-A	Lab Control Sample	101	112	107	103	108	107	104	101

		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)
380-241197-B-1-A MS	Matrix Spike	111	108	108	102	109	95	97	103
380-241197-C-1-A MSD	Matrix Spike Duplicate	112	108	110	106	110	97	102	102
380-241202-2	FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)	110	112	107	104	106	95	95	102
LCS 380-257869/22-A	Lab Control Sample	111	111	107	105	110	96	99	101
MBL 380-257869/20-A	Method Blank	110	112	108	108	109	98	104	106
MRL 380-257869/21-A	Lab Control Sample	112	111	109	105	107	98	100	105

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA

Isotope Dilution Summary

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

Job ID: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

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 380-257869/20-A
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257869

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		10/12/26 08:36	10/13/26 21:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluorononanoic acid (PFNA)	<0.39		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.24		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0		ng/L		10/12/26 08:36	10/13/26 21:11	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*99*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C6 PFDA	*112*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C5 PFHxA	*105*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C4 PFHpA	*103*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C8 PFOA	*104*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C9 PFNA	*105*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C7 PFUnA	*103*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C2 PFDoA	*100*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C4 PFBA	*110*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C5 PFPeA	*112*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C3 PFBS	*108*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*
13C3 PFHxS	*108*		*50 - 200*	*10/12/26 08:36*	*10/13/26 21:11*	*1*

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

Lab Sample ID: MBL 380-257869/20-A
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257869

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	109		50 - 200	10/12/26 08:36	10/13/26 21:11	1
13C2-4:2-FTS	98		50 - 200	10/12/26 08:36	10/13/26 21:11	1
13C2-6:2-FTS	104		50 - 200	10/12/26 08:36	10/13/26 21:11	1
13C2-8:2-FTS	106		50 - 200	10/12/26 08:36	10/13/26 21:11	1

Lab Sample ID: LCS 380-257869/22-A
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257869

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	59.2	55.4		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	59.2	56.4		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	59.2	57.7		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.2	57.0		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.2	57.7		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	59.2	55.2		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	59.2	58.5		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.2	61.3		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.2	58.5		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	59.2	56.2		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	59.2	58.3		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.2	57.2		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	59.2	58.6		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	59.2	56.2		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	59.2	57.3		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.2	58.8		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.2	60.9		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.2	55.9		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	59.2	58.7		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	59.2	57.6		ng/L		97	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.2	55.0		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.2	56.2		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	59.2	55.0		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.2	57.2		ng/L		97	70 - 130

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

Lab Sample ID: LCS 380-257869/22-A
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257869

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			59.2	59.8		ng/L		101	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*107*		*50 - 200*
13C6 PFDA	*116*		*50 - 200*
13C5 PFHxA	*112*		*50 - 200*
13C4 PFHpA	*109*		*50 - 200*
13C8 PFOA	*113*		*50 - 200*
13C9 PFNA	*110*		*50 - 200*
13C7 PFUnA	*111*		*50 - 200*
13C2 PFDoA	*107*		*50 - 200*
13C4 PFBA	*111*		*50 - 200*
13C5 PFPeA	*111*		*50 - 200*
13C3 PFBS	*107*		*50 - 200*
13C3 PFHxS	*105*		*50 - 200*
13C8 PFOS	*110*		*50 - 200*
13C2-4:2-FTS	*96*		*50 - 200*
13C2-6:2-FTS	*99*		*50 - 200*
13C2-8:2-FTS	*101*		*50 - 200*

Lab Sample ID: MRL 380-257869/21-A
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257869

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			1.97	2.03	J	ng/L		103	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			1.97	2.02	J	ng/L		103	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			1.97	1.83	J	ng/L		93	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			1.97	1.99	J	ng/L		101	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			1.97	1.92	J	ng/L		98	50 - 150		
Perfluorodecanoic acid (PFDA)			1.97	1.88	J	ng/L		95	50 - 150		
Perfluorododecanoic acid (PFDoA)			1.97	2.02	J	ng/L		103	50 - 150		
Perfluoroheptanoic acid (PFHpA)			1.97	2.14	J	ng/L		109	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			1.97	1.94	J	ng/L		99	50 - 150		
Perfluorohexanoic acid (PFHxA)			1.97	1.91	J	ng/L		97	50 - 150		
Perfluorononanoic acid (PFNA)			1.97	1.96	J	ng/L		99	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			1.97	2.17	J	ng/L		110	50 - 150		
Perfluorooctanoic acid (PFOA)			1.97	2.05	J	ng/L		104	50 - 150		
Perfluoroundecanoic acid (PFUnA)			1.97	1.99	J	ng/L		101	50 - 150		
Perfluorobutanoic acid (PFBA)			1.97	1.98	J	ng/L		100	50 - 150		

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

Lab Sample ID: MRL 380-257869/21-A
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257869

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	2.15	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	2.14	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.06	J	ng/L		105	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	2.11	J	ng/L		107	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.97	2.00	J	ng/L		102	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	1.90	J	ng/L		96	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	1.94	J	ng/L		99	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	1.97	J	ng/L		100	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	2.00	J	ng/L		102	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	2.02	J	ng/L		103	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*101*		*50 - 200*
13C6 PFDA	*112*		*50 - 200*
13C5 PFHxA	*107*		*50 - 200*
13C4 PFHpA	*103*		*50 - 200*
13C8 PFOA	*108*		*50 - 200*
13C9 PFNA	*107*		*50 - 200*
13C7 PFUnA	*104*		*50 - 200*
13C2 PFDoA	*101*		*50 - 200*
13C4 PFBA	*112*		*50 - 200*
13C5 PFPeA	*111*		*50 - 200*
13C3 PFBS	*109*		*50 - 200*
13C3 PFHxS	*105*		*50 - 200*
13C8 PFOS	*107*		*50 - 200*
13C2-4:2-FTS	*98*		*50 - 200*
13C2-6:2-FTS	*100*		*50 - 200*
13C2-8:2-FTS	*105*		*50 - 200*

Lab Sample ID: 380-241197-B-1-A MS
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 257869

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		59.2	55.9		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.2	58.7		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	57.3		ng/L		97	70 - 130

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

Lab Sample ID: 380-241197-B-1-A MS
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 257869

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		59.2	59.5		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	59.5		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		59.2	56.2		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	58.9		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		59.2	61.2		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	63.0		ng/L		106	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	58.8		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		59.2	60.0		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.2	59.8		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		59.2	59.8		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	60.1		ng/L		102	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		59.2	59.3		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	61.0		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	62.9		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	61.5		ng/L		104	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.2	60.3		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		59.2	59.5		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	58.1		ng/L		98	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.2	58.8		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	57.1		ng/L		96	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	60.7		ng/L		103	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	63.5		ng/L		107	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*104*		*50 - 200*
13C6 PFDA	*117*		*50 - 200*
13C5 PFHxA	*108*		*50 - 200*
13C4 PFHpA	*107*		*50 - 200*
13C8 PFOA	*106*		*50 - 200*
13C9 PFNA	*109*		*50 - 200*
13C7 PFUnA	*106*		*50 - 200*
13C2 PFDoA	*103*		*50 - 200*
13C4 PFBA	*111*		*50 - 200*
13C5 PFPeA	*108*		*50 - 200*
13C3 PFBS	*108*		*50 - 200*
13C3 PFHxS	*102*		*50 - 200*
13C8 PFOS	*109*		*50 - 200*

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

Lab Sample ID: 380-241197-B-1-A MS
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 257869

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	95		50 - 200
13C2-6:2-FTS	97		50 - 200
13C2-8:2-FTS	103		50 - 200

Lab Sample ID: 380-241197-C-1-A MSD
Matrix: Water
Analysis Batch: 258238

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 257869

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		59.2	56.3		ng/L		95	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.2	57.6		ng/L		97	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	56.0		ng/L		95	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		59.2	59.9		ng/L		101	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	57.8		ng/L		98	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		59.2	55.4		ng/L		94	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	59.5		ng/L		100	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		59.2	60.6		ng/L		102	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	59.1		ng/L		100	70 - 130	6	30
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	56.8		ng/L		96	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		59.2	60.2		ng/L		102	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.2	57.9		ng/L		98	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		59.2	59.9		ng/L		101	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	58.9		ng/L		100	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		59.2	59.0		ng/L		100	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	59.6		ng/L		101	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	60.9		ng/L		103	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	55.3		ng/L		94	70 - 130	11	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.2	58.6		ng/L		99	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		59.2	59.7		ng/L		101	70 - 130	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	57.1		ng/L		97	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.2	56.2		ng/L		95	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	55.9		ng/L		94	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	58.9		ng/L		100	70 - 130	3	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	59.4		ng/L		100	70 - 130	7	30

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	103		50 - 200
13C6 PFDA	113		50 - 200
13C5 PFHxA	108		50 - 200
13C4 PFHpA	106		50 - 200
13C8 PFOA	107		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	105		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	112		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	110		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	97		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	102		50 - 200

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

Lab Sample ID: MBL 380-257859/20-A
Matrix: Water
Analysis Batch: 258631

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257859

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		10/12/26 03:10	10/14/26 14:37	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluorononanoic acid (PFNA)	<0.39		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
Perfluorotridecanoic acid (PFTrDA)	<0.35		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.29		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0		ng/L		10/12/26 03:10	10/14/26 14:37	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	102		70 - 130	10/12/26 03:10	10/14/26 14:37	1
13C2 PFHxA	100		70 - 130	10/12/26 03:10	10/14/26 14:37	1
13C2 PFDA	98		70 - 130	10/12/26 03:10	10/14/26 14:37	1

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

Lab Sample ID: MBL 380-257859/20-A
Matrix: Water
Analysis Batch: 258631

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257859

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	94		70 - 130	10/12/26 03:10	10/14/26 14:37	1

Lab Sample ID: LCS 380-257859/22-A
Matrix: Water
Analysis Batch: 258631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257859

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	24.6	23.3		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	24.6	28.4		ng/L		116	70 - 130
Perfluoroundecanoic acid (PFUnA)	24.6	27.9		ng/L		114	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	24.6	24.9		ng/L		102	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	24.6	25.5		ng/L		104	70 - 130
Perfluorohexanoic acid (PFHxA)	24.6	25.7		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	24.6	29.3		ng/L		119	70 - 130
Perfluorooctanoic acid (PFOA)	24.6	28.5		ng/L		116	70 - 130
Perfluorodecanoic acid (PFDA)	24.6	26.2		ng/L		107	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	24.6	29.5		ng/L		120	70 - 130
Perfluorobutanesulfonic acid (PFBS)	24.6	28.5		ng/L		116	70 - 130
Perfluoroheptanoic acid (PFHpA)	24.6	27.0		ng/L		110	70 - 130
Perfluorononanoic acid (PFNA)	24.6	29.8		ng/L		121	70 - 130
Perfluorotetradecanoic acid (PFTA)	24.6	26.2		ng/L		107	70 - 130
Perfluorotridecanoic acid (PFTrDA)	24.6	29.9		ng/L		122	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	24.6	28.0		ng/L		114	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	24.6	27.7		ng/L		113	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	24.6	25.5		ng/L		104	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	92		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	104		70 - 130
13C3-GenX	83		70 - 130

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

Lab Sample ID: MRL 380-257859/21-A
Matrix: Water
Analysis Batch: 258631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257859

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.96	1.60	J	ng/L		82	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.96	2.24	J	ng/L		114	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	2.29	J	ng/L		116	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.96	1.96	J	ng/L		100	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.96	1.96	J	ng/L		100	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	1.83	J	ng/L		93	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	2.05	J	ng/L		104	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	2.11	J	ng/L		107	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	2.06	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.96	2.20	J	ng/L		112	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	2.10	J	ng/L		107	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	1.86	J	ng/L		95	50 - 150
Perfluorononanoic acid (PFNA)	1.96	2.18	J	ng/L		111	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.96	1.88	J	ng/L		96	50 - 150
Perfluorotridecanoic acid (PFTrDA)	1.96	2.21	J	ng/L		113	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.96	2.15	J	ng/L		109	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	2.02	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	1.79	J	ng/L		91	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*97*		*70 - 130*
13C2 PFHxA	*90*		*70 - 130*
13C2 PFDA	*95*		*70 - 130*
13C3-GenX	*75*		*70 - 130*

Lab Sample ID: 380-241151-E-2-A MS
Matrix: Water
Analysis Batch: 258631

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 257859

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	23.8		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	4.9		24.6	34.0		ng/L		118	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		24.6	27.3		ng/L		111	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.6	27.3		ng/L		111	70 - 130

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

Lab Sample ID: 380-241151-E-2-A MS
Matrix: Water
Analysis Batch: 258631

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 257859

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.6	28.3		ng/L		115	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		24.6	27.1		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		24.6	25.9		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		24.6	28.3		ng/L		112	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		24.6	29.8		ng/L		121	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.6	31.4		ng/L		120	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.6	31.1		ng/L		121	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		24.6	26.6		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		24.6	29.8		ng/L		121	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		24.6	24.3		ng/L		99	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.6	27.6		ng/L		112	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.6	28.9		ng/L		117	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.6	29.1		ng/L		118	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.6	26.1		ng/L		106	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*102*		*70 - 130*
13C2 PFHxA	*94*		*70 - 130*
13C2 PFDA	*104*		*70 - 130*
13C3-GenX	*88*		*70 - 130*

Lab Sample ID: 380-241151-F-2-A MSD
Matrix: Water
Analysis Batch: 258631

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 257859

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		24.6	27.6		ng/L		112	70 - 130	15	30
Perfluorooctanesulfonic acid (PFOS)	4.9		24.6	33.2		ng/L		115	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		24.6	29.3		ng/L		119	70 - 130	7	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.6	26.7		ng/L		108	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.6	28.4		ng/L		116	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		24.6	29.3		ng/L		117	70 - 130	8	30
Perfluorododecanoic acid (PFDoA)	<2.0		24.6	29.4		ng/L		119	70 - 130	13	30
Perfluorooctanoic acid (PFOA)	<2.0		24.6	32.3		ng/L		128	70 - 130	13	30
Perfluorodecanoic acid (PFDA)	<2.0		24.6	30.3		ng/L		123	70 - 130	1	30

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

Lab Sample ID: 380-241151-F-2-A MSD
Matrix: Water
Analysis Batch: 258631

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 257859

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.6	31.1		ng/L		119	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.6	30.4		ng/L		119	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		24.6	29.4		ng/L		119	70 - 130	10	30
Perfluorononanoic acid (PFNA)	<2.0		24.6	30.6		ng/L		124	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		24.6	25.8		ng/L		105	70 - 130	6	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.6	28.9		ng/L		118	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.6	28.3		ng/L		115	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.6	28.1		ng/L		114	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.6	29.7		ng/L		121	70 - 130	13	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*102*		*70 - 130*
13C2 PFHxA	*106*		*70 - 130*
13C2 PFDA	*115*		*70 - 130*
13C3-GenX	*102*		*70 - 130*

LCMS

Prep Batch: 257859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-241202-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	537.1 DW	
380-241202-2	FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Water	537.1 DW	
MBL 380-257859/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-257859/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-257859/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-241151-E-2-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-241151-F-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 257869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-241202-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	533	
380-241202-2	FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Water	533	
MBL 380-257869/20-A	Method Blank	Total/NA	Water	533	
LCS 380-257869/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-257869/21-A	Lab Control Sample	Total/NA	Water	533	
380-241197-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-241197-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 258238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-241202-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	533	257869
380-241202-2	FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Water	533	257869
MBL 380-257869/20-A	Method Blank	Total/NA	Water	533	257869
LCS 380-257869/22-A	Lab Control Sample	Total/NA	Water	533	257869
MRL 380-257869/21-A	Lab Control Sample	Total/NA	Water	533	257869
380-241197-B-1-A MS	Matrix Spike	Total/NA	Water	533	257869
380-241197-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	257869

Analysis Batch: 258631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-241202-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	EPA 537.1 V2	257859
380-241202-2	FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Water	EPA 537.1 V2	257859
MBL 380-257859/20-A	Method Blank	Total/NA	Water	EPA 537.1 V2	257859
LCS 380-257859/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	257859
MRL 380-257859/21-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	257859
380-241151-E-2-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	257859
380-241151-F-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	257859

Lab Chronicle

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

Job ID: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-241202-1

Date Collected: 10/07/26 13:30
Date Received: 10/09/26 09:30

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			257869	XTD8	EA POM	10/12/26 08:36
Total/NA	Analysis	533		1	258238	UKDT	EA POM	10/14/26 01:11
Total/NA	Prep	537.1 DW			257859	G9MN	EA POM	10/12/26 03:10
Total/NA	Analysis	EPA 537.1 V2		1	258631	UKDT	EA POM	10/14/26 17:48

Client Sample ID: FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-241202-2

Date Collected: 10/07/26 13:30
Date Received: 10/09/26 09:30

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			257869	XTD8	EA POM	10/12/26 08:36
Total/NA	Analysis	533		1	258238	UKDT	EA POM	10/14/26 01:25
Total/NA	Prep	537.1 DW			257859	G9MN	EA POM	10/12/26 03:10
Total/NA	Analysis	EPA 537.1 V2		1	258631	UKDT	EA POM	10/14/26 17:58

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: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

Laboratory: Eurofins Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-27

Method Summary

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

Job ID: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

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: 380-241202-1
SDG: PFAS: Aiea Gulch Wells Pump 1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-241202-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Drinking Water	10/07/26 13:30	10/09/26 09:30	HI0000331
380-241202-2	FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Water	10/07/26 13:30	10/09/26 09:30	HI0000331

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: Kai Edison	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): RUSH			
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

380-241202 COC

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: NH4 Acetate

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				Y	Z		
AIEA GULCH WELLS PUMP 1 (331-201-TP071)	7-Oct-2026	13:30	G	Water			3	3		
FB AIEA GULCH WELLS PUMP 1 (331-201-TP071)	7-Oct-2026	13:30	G	Water			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: 8784 0572 1665

	Relinquished by: [redacted]	Date/Time: 10/8/26 12:00	Company HBWS	Received by:	Date/Time: 10/9/26 9:30	Company
	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: 6.3/A/2-Stack = 3.0 GR2

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-241202-1
SDG Number: PFAS: Aiea Gulch Wells Pump 1

Login Number: 241202
List Number: 1
Creator: Ngo, Theodore

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).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	