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# 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 1/15/2025 11:48:55 AM

## JOB DESCRIPTION

RED-HILL  
Weekly PFAS

## JOB NUMBER

380-129380-1

# Eurofins Eaton Analytical Pomona

## Job Notes

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

## Compliance Statement

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

## Authorization



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# Definitions/Glossary

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

## Qualifiers

### LCMS

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

## Glossary

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

# Case Narrative

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

Job ID: 380-129380-1

**Job ID: 380-129380-1**

**Eurofins Eaton Analytical Pomona**

## **Job Narrative 380-129380-1**

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

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

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

### **Receipt**

The samples were received on 1/9/2025 9:57 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 5.1°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: 380-129380-1  
SDG: Weekly PFAS

## Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-129380-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.9		2.0	ng/L	1		537.1	Total/NA

## Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-129380-2

No Detections.

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

**Client Sample ID: Halawa Shaft Viewing Pool**

**Lab Sample ID: 380-129380-1**

Date Collected: 01/07/25 10:00

Matrix: Water

Date Received: 01/09/25 09:57

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>3.2</b>		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.3</b>		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 12:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	104		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C6 PFDA	113		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C5 PFHxA	113		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C4 PFHpA	116		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C8 PFOA	119		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C9 PFNA	120		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C7 PFUnA	113		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C2 PFDoA	114		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C4 PFBA	113		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C5 PFPeA	122		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C3 PFBS	122		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C3 PFHxS	125		50 - 200	01/12/25 14:23	01/13/25 12:42	1

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# Client Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

**Client Sample ID: Halawa Shaft Viewing Pool**

**Lab Sample ID: 380-129380-1**

Date Collected: 01/07/25 10:00

Matrix: Water

Date Received: 01/09/25 09:57

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	121		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C2-4:2-FTS	155		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C2-6:2-FTS	144		50 - 200	01/12/25 14:23	01/13/25 12:42	1
13C2-8:2-FTS	133		50 - 200	01/12/25 14:23	01/13/25 12:42	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.6</b>		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
N-ethylperfluorooctanesulfonamide cetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>3.9</b>		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:38	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
d5-NEtFOSAA	119		70 - 130			01/12/25 11:42	01/14/25 09:38	1
13C2 PFHxA	117		70 - 130			01/12/25 11:42	01/14/25 09:38	1
13C2 PFDA	120		70 - 130			01/12/25 11:42	01/14/25 09:38	1
13C3-GenX	122		70 - 130			01/12/25 11:42	01/14/25 09:38	1

**Client Sample ID: FB: Halawa Shaft Viewing Pool**

**Lab Sample ID: 380-129380-2**

Date Collected: 01/07/25 10:00

Matrix: Water

Date Received: 01/09/25 09:57

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1

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# Client Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

**Client Sample ID: FB: Halawa Shaft Viewing Pool**

**Lab Sample ID: 380-129380-2**

Date Collected: 01/07/25 10:00

Matrix: Water

Date Received: 01/09/25 09:57

**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		01/12/25 14:23	01/13/25 13:01	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/12/25 14:23	01/13/25 13:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	106		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C6 PFDA	116		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C5 PFHxA	122		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C4 PFHpA	126		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C8 PFOA	127		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C9 PFNA	122		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C7 PFUnA	119		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C2 PFDoA	119		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C4 PFBA	119		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C5 PFPeA	127		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C3 PFBS	121		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C3 PFHxS	122		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C8 PFOS	123		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C2-4:2-FTS	146		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C2-6:2-FTS	137		50 - 200	01/12/25 14:23	01/13/25 13:01	1
13C2-8:2-FTS	130		50 - 200	01/12/25 14:23	01/13/25 13:01	1

# Client Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

**Client Sample ID: FB: Halawa Shaft Viewing Pool**

**Lab Sample ID: 380-129380-2**

**Date Collected: 01/07/25 10:00**

**Matrix: Water**

**Date Received: 01/09/25 09:57**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/12/25 11:42	01/14/25 09:47	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
d5-NEtFOSAA	117		70 - 130			01/12/25 11:42	01/14/25 09:47	1
13C2 PFHxA	119		70 - 130			01/12/25 11:42	01/14/25 09:47	1
13C2 PFDA	116		70 - 130			01/12/25 11:42	01/14/25 09:47	1
13C3-GenX	114		70 - 130			01/12/25 11:42	01/14/25 09:47	1

# Action Limit Summary

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

**Client Sample ID: Halawa Shaft Viewing Pool**

**Lab Sample ID: 380-129380-1**

## 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	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.2		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.9		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

**Client Sample ID: FB: Halawa Shaft Viewing Pool**

**Lab Sample ID: 380-129380-2**

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

# Surrogate Summary

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

Job ID: 380-129380-1  
 SDG: Weekly PFAS

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

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Surrogate Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-129380-1	Halawa Shaft Viewing Pool	119	117	120	122
380-129380-2	FB: Halawa Shaft Viewing Pool	117	119	116	114
380-129619-A-1-B MS	Matrix Spike	103	113	108	117
380-129619-A-1-C MSD	Matrix Spike Duplicate	120	127	119	129
LCS 380-127388/23-A	Lab Control Sample	119	123	119	124
MBL 380-127388/21-A	Method Blank	111	109	110	110
MRL 380-127388/22-A	Lab Control Sample	113	121	116	120

**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: 380-129380-1  
 SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-128700-B-4-A MS	Matrix Spike	116	111	112	114	114	116	117	112
380-128700-C-4-A MSD	Matrix Spike Duplicate	112	117	110	115	117	118	119	116
380-129380-1	Halawa Shaft Viewing Pool	104	113	113	116	119	120	113	114
380-129380-2	FB: Halawa Shaft Viewing Pool	106	116	122	126	127	122	119	119
LCS 380-127418/22-A	Lab Control Sample	112	120	125	126	124	121	124	120
MBL 380-127418/20-A	Method Blank	107	119	124	124	123	121	116	122
MRL 380-127418/21-A	Lab Control Sample	99	112	115	117	115	114	115	113

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-128700-B-4-A MS	Matrix Spike	116	132	115	117	116	124	124	117
380-128700-C-4-A MSD	Matrix Spike Duplicate	114	127	114	117	115	130	130	119
380-129380-1	Halawa Shaft Viewing Pool	113	122	122	125	121	155	144	133
380-129380-2	FB: Halawa Shaft Viewing Pool	119	127	121	122	123	146	137	130
LCS 380-127418/22-A	Lab Control Sample	118	128	124	128	122	138	139	127
MBL 380-127418/20-A	Method Blank	117	127	126	128	124	150	147	132
MRL 380-127418/21-A	Lab Control Sample	121	118	117	120	118	146	137	128

#### 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

# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MBL 380-127418/20-A**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		01/12/25 14:23	01/13/25 10:37	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	107		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C6 PFDA	119		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C5 PFHxA	124		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C4 PFHpA	124		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C8 PFOA	123		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C9 PFNA	121		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C7 PFUnA	116		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C2 PFDoA	122		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C4 PFBA	117		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C5 PFPeA	127		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C3 PFBS	126		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C3 PFHxS	128		50 - 200	01/12/25 14:23	01/13/25 10:37	1

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# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MBL 380-127418/20-A**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	124		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C2-4:2-FTS	150		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C2-6:2-FTS	147		50 - 200	01/12/25 14:23	01/13/25 10:37	1
13C2-8:2-FTS	132		50 - 200	01/12/25 14:23	01/13/25 10:37	1

**Lab Sample ID: LCS 380-127418/22-A**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	54.8		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	52.9		ng/L		88	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	55.4		ng/L		92	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	55.0		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	58.3		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	57.3		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	57.3		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	53.7		ng/L		89	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	55.6		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	54.6		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	60.2	54.3		ng/L		90	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	57.4		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	54.2		ng/L		90	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	57.3		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	55.5		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	58.6		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	57.0		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	56.8		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	55.3		ng/L		92	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	52.9		ng/L		88	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	58.2		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	56.6		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	55.3		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	56.0		ng/L		93	70 - 130

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# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

**Lab Sample ID: LCS 380-127418/22-A**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.2	56.6		ng/L		94	70 - 130
<b>LCS LCS</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
13C3 HFPO-DA	112		50 - 200				
13C6 PFDA	120		50 - 200				
13C5 PFHxA	125		50 - 200				
13C4 PFHpA	126		50 - 200				
13C8 PFOA	124		50 - 200				
13C9 PFNA	121		50 - 200				
13C7 PFUnA	124		50 - 200				
13C2 PFDoA	120		50 - 200				
13C4 PFBA	118		50 - 200				
13C5 PFPeA	128		50 - 200				
13C3 PFBS	124		50 - 200				
13C3 PFHxS	128		50 - 200				
13C8 PFOS	122		50 - 200				
13C2-4:2-FTS	138		50 - 200				
13C2-6:2-FTS	139		50 - 200				
13C2-8:2-FTS	127		50 - 200				

**Lab Sample ID: MRL 380-127418/21-A**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.86	J	ng/L		92	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.79	J	ng/L		89	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.98	J	ng/L		99	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.06	J	ng/L		102	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.02	J	ng/L		100	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.96	J	ng/L		97	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.04	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.01	J	ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.88	J	ng/L		94	50 - 150

Eurofins Eaton Analytical Pomona



# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MRL 380-127418/21-A**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	1.97	J	ng/L		98	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.20	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.22	J	ng/L		111	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.02	J	ng/L		101	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.89	J	ng/L		94	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.96	J	ng/L		97	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.02	J	ng/L		100	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.95	J	ng/L		97	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.97	J	ng/L		98	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	99		50 - 200
13C6 PFDA	112		50 - 200
13C5 PFHxA	115		50 - 200
13C4 PFHpA	117		50 - 200
13C8 PFOA	115		50 - 200
13C9 PFNA	114		50 - 200
13C7 PFUnA	115		50 - 200
13C2 PFDoA	113		50 - 200
13C4 PFBA	121		50 - 200
13C5 PFPeA	118		50 - 200
13C3 PFBS	117		50 - 200
13C3 PFHxS	120		50 - 200
13C8 PFOS	118		50 - 200
13C2-4:2-FTS	146		50 - 200
13C2-6:2-FTS	137		50 - 200
13C2-8:2-FTS	128		50 - 200

**Lab Sample ID: 380-128700-B-4-A MS**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	103		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	96.6		ng/L		80	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	105		ng/L		87	70 - 130

# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-128700-B-4-A MS**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	102		ng/L		85	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	111		ng/L		91	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	110		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	113		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	104		ng/L		86	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	109		ng/L		89	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	110		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	105		ng/L		87	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	108		ng/L		89	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	109		ng/L		89	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	108		ng/L		90	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	110		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	106		ng/L		89	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	113		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	91.5		ng/L		76	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	102		ng/L		85	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	118		ng/L		98	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	110		ng/L		91	70 - 130
Perfluoropentanoic acid (PFPeA)	2.2		120	100		ng/L		82	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	107		ng/L		89	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	106		ng/L		88	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	116		50 - 200
13C6 PFDA	111		50 - 200
13C5 PFHxA	112		50 - 200
13C4 PFHpA	114		50 - 200
13C8 PFOA	114		50 - 200
13C9 PFNA	116		50 - 200
13C7 PFUnA	117		50 - 200
13C2 PFDoA	112		50 - 200
13C4 PFBA	116		50 - 200
13C5 PFPeA	132		50 - 200
13C3 PFBS	115		50 - 200
13C3 PFHxS	117		50 - 200
13C8 PFOS	116		50 - 200

# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-128700-B-4-A MS**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	124		50 - 200
13C2-6:2-FTS	124		50 - 200
13C2-8:2-FTS	117		50 - 200

**Lab Sample ID: 380-128700-C-4-A MSD**  
**Matrix: Water**  
**Analysis Batch: 127520**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 127418**

<b>Analyte</b>	<b>Sample Result</b>	<b>Sample Qualifier</b>	<b>Spike Added</b>	<b>MSD Result</b>	<b>MSD Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	104		ng/L		87	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	101		ng/L		84	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	108		ng/L		90	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	105		ng/L		88	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	112		ng/L		92	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		120	110		ng/L		91	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	113		ng/L		94	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	108		ng/L		89	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	111		ng/L		91	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	117		ng/L		96	70 - 130	6	30
Perfluorononanoic acid (PFNA)	<2.0		120	106		ng/L		88	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	110		ng/L		91	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		120	111		ng/L		91	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	107		ng/L		89	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		120	112		ng/L		93	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	104		ng/L		86	70 - 130	3	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	107		ng/L		89	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	107		ng/L		89	70 - 130	6	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	110		ng/L		91	70 - 130	18	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	102		ng/L		85	70 - 130	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	116		ng/L		96	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	114		ng/L		95	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	2.2		120	105		ng/L		86	70 - 130	5	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	109		ng/L		91	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	109		ng/L		90	70 - 130	2	30

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# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	112		50 - 200
13C6 PFDA	117		50 - 200
13C5 PFHxA	110		50 - 200
13C4 PFHpA	115		50 - 200
13C8 PFOA	117		50 - 200
13C9 PFNA	118		50 - 200
13C7 PFUnA	119		50 - 200
13C2 PFDoA	116		50 - 200
13C4 PFBA	114		50 - 200
13C5 PFPeA	127		50 - 200
13C3 PFBS	114		50 - 200
13C3 PFHxS	117		50 - 200
13C8 PFOS	115		50 - 200
13C2-4:2-FTS	130		50 - 200
13C2-6:2-FTS	130		50 - 200
13C2-8:2-FTS	119		50 - 200

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

**Lab Sample ID: MBL 380-127388/21-A**  
**Matrix: Water**  
**Analysis Batch: 127704**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 127388**

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/12/25 11:42	01/14/25 06:46	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	111		70 - 130			01/12/25 11:42	01/14/25 06:46	1
13C2 PFHxA	109		70 - 130			01/12/25 11:42	01/14/25 06:46	1
13C2 PFDA	110		70 - 130			01/12/25 11:42	01/14/25 06:46	1

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MBL 380-127388/21-A**  
**Matrix: Water**  
**Analysis Batch: 127704**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 127388**

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	110		70 - 130	01/12/25 11:42	01/14/25 06:46	1

**Lab Sample ID: LCS 380-127388/23-A**  
**Matrix: Water**  
**Analysis Batch: 127704**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 127388**

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	50.4		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.1	54.2		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	50.9		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	50.5		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	50.1		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	51.4		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	51.0		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	55.0		ng/L		110	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	52.5		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.1	54.7		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	53.3		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	51.1		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	50.1	52.8		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	48.8		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	50.9		ng/L		102	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	50.1	52.6		ng/L		105	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	51.2		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	52.9		ng/L		106	70 - 130

  

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	119		70 - 130
13C2 PFHxA	123		70 - 130
13C2 PFDA	119		70 - 130
13C3-GenX	124		70 - 130

# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MRL 380-127388/22-A**  
**Matrix: Water**  
**Analysis Batch: 127704**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 127388**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.31	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.35	J	ng/L		117	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.27	J	ng/L		113	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.43	J	ng/L		121	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.32	J	ng/L		115	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.36	J	ng/L		118	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.33	J	ng/L		116	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.37	J	ng/L		118	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.32	J	ng/L		116	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.19	J	ng/L		109	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.38	J	ng/L		119	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.31	J	ng/L		115	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.36	J	ng/L		117	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.28	J	ng/L		113	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.23	J	ng/L		111	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.21	J	ng/L		110	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.40	J	ng/L		120	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	113		70 - 130
13C2 PFHxA	121		70 - 130
13C2 PFDA	116		70 - 130
13C3-GenX	120		70 - 130

**Lab Sample ID: 380-129619-A-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 127704**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 127388**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	52.7		ng/L		105	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	54.3		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	50.5		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	50.4		ng/L		100	70 - 130

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# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-129619-A-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 127704**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 127388**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	49.0		ng/L		98	70 - 130	
Perfluorohexanoic acid (PFHxA)	2.8		50.2	56.6		ng/L		107	70 - 130	
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	50.1		ng/L		100	70 - 130	
Perfluorooctanoic acid (PFOA)	<2.0		50.2	53.1		ng/L		105	70 - 130	
Perfluorodecanoic acid (PFDA)	<2.0		50.2	53.7		ng/L		107	70 - 130	
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	54.7		ng/L		107	70 - 130	
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	53.1		ng/L		102	70 - 130	
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	52.2		ng/L		104	70 - 130	
Perfluorononanoic acid (PFNA)	<2.0		50.2	50.7		ng/L		101	70 - 130	
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	49.4		ng/L		98	70 - 130	
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	50.8		ng/L		101	70 - 130	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	51.8		ng/L		103	70 - 130	
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	51.8		ng/L		103	70 - 130	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	53.9		ng/L		107	70 - 130	
<b>MS MS</b>										
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
d5-NEtFOSAA	103		70 - 130							
13C2 PFHxA	113		70 - 130							
13C2 PFDA	108		70 - 130							
13C3-GenX	117		70 - 130							

**Lab Sample ID: 380-129619-A-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 127704**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 127388**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	51.6		ng/L		103	70 - 130		2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	55.4		ng/L		108	70 - 130		2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	52.7		ng/L		105	70 - 130		4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	52.7		ng/L		105	70 - 130		4	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	54.8		ng/L		109	70 - 130		11	30
Perfluorohexanoic acid (PFHxA)	2.8		50.2	57.0		ng/L		108	70 - 130		1	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	52.1		ng/L		104	70 - 130		4	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	56.4		ng/L		111	70 - 130		6	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	54.4		ng/L		108	70 - 130		1	30

# QC Sample Results

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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

Lab Sample ID: 380-129619-A-1-C MSD

Matrix: Water

Analysis Batch: 127704

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 127388

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	55.4		ng/L		109	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	53.3		ng/L		103	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	55.1		ng/L		110	70 - 130	5	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	54.1		ng/L		108	70 - 130	6	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	50.4		ng/L		100	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	50.7		ng/L		101	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	53.4		ng/L		106	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	51.9		ng/L		103	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	54.6		ng/L		109	70 - 130	1	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
d5-NEtFOSAA	120		70 - 130
13C2 PFHxA	127		70 - 130
13C2 PFDA	119		70 - 130
13C3-GenX	129		70 - 130



# QC Association Summary

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

Job ID: 380-129380-1  
 SDG: Weekly PFAS

## LCMS

### Prep Batch: 127388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-129380-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
380-129380-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
MBL 380-127388/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-127388/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-127388/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-129619-A-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-129619-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Prep Batch: 127418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-129380-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	
380-129380-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	533	
MBL 380-127418/20-A	Method Blank	Total/NA	Water	533	
LCS 380-127418/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-127418/21-A	Lab Control Sample	Total/NA	Water	533	
380-128700-B-4-A MS	Matrix Spike	Total/NA	Water	533	
380-128700-C-4-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

### Analysis Batch: 127520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-129380-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	127418
380-129380-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	533	127418
MBL 380-127418/20-A	Method Blank	Total/NA	Water	533	127418
LCS 380-127418/22-A	Lab Control Sample	Total/NA	Water	533	127418
MRL 380-127418/21-A	Lab Control Sample	Total/NA	Water	533	127418
380-128700-B-4-A MS	Matrix Spike	Total/NA	Water	533	127418
380-128700-C-4-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	127418

### Analysis Batch: 127704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-129380-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	127388
380-129380-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	537.1	127388
MBL 380-127388/21-A	Method Blank	Total/NA	Water	537.1	127388
LCS 380-127388/23-A	Lab Control Sample	Total/NA	Water	537.1	127388
MRL 380-127388/22-A	Lab Control Sample	Total/NA	Water	537.1	127388
380-129619-A-1-B MS	Matrix Spike	Total/NA	Water	537.1	127388
380-129619-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	127388

# Lab Chronicle

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

## Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-129380-1

Date Collected: 01/07/25 10:00

Matrix: Water

Date Received: 01/09/25 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			127418	N8NE	EA POM	01/12/25 14:23
Total/NA	Analysis	533		1	127520	SZ9R	EA POM	01/13/25 12:42
Total/NA	Prep	537.1 DW			127388	E9PK	EA POM	01/12/25 11:42
Total/NA	Analysis	537.1		1	127704	SZ9R	EA POM	01/14/25 09:38

## Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-129380-2

Date Collected: 01/07/25 10:00

Matrix: Water

Date Received: 01/09/25 09:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			127418	N8NE	EA POM	01/12/25 14:23
Total/NA	Analysis	533		1	127520	SZ9R	EA POM	01/13/25 13:01
Total/NA	Prep	537.1 DW			127388	E9PK	EA POM	01/12/25 11:42
Total/NA	Analysis	537.1		1	127704	SZ9R	EA POM	01/14/25 09:47

### Laboratory References:

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

# Accreditation/Certification Summary

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

## Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-25

- 1
- 2
- 3
- 4
- 5
- 6
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- 17

# Method Summary

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100



# Sample Summary

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

Job ID: 380-129380-1  
SDG: Weekly PFAS

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<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
380-129380-1	Halawa Shaft Viewing Pool	Water	01/07/25 10:00	01/09/25 09:57
380-129380-2	FB: Halawa Shaft Viewing Pool	Water	01/07/25 10:00	01/09/25 09:57

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**Chain of Custody Record**

<b>Client Information</b>		Lab PM: Avada, Rachelle		Carrier Tracking No(s): 380-28005-2757 1	
Client Contact: Ryan Greer		E-Mail: Rachelle.Arada@et.eurofins.com		Page: Page 1 of 1	
City & County of Honolulu		PWSID:		Job #:	
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:		Preservation Codes: R - NaThioSO4 RA - NaThioHCl Q - Na2SO3 QA - Na2SO3/HCl Y - Trizma I - NH4 Acetate	
City: Honolulu		TAT Requested (days):		Other:	
State, Zip: HI 96843		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Phone: 808-748-5091(Tel)		PG #: C20525101 exp 05312023			
Email: RFENSTEMACHER@hbws.org		WO #:			
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111			
Site: Hawaii		SSON#:			

  

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solids, O=soil, T=tissue, A=air)	Analysis Requested			Special Instructions/Note:
					Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	626.1, 626.1-SIM	
Halawa Shaft Viewing Pool	1/7/25	1000		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	380-129380 COC
FB Halawa Shaft Viewing Pool	1/7/25	1000		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

  

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	
Deliverable Requested I, II, III, IV, Other (specify)	
Empty Kit Relinquished by:	Date: 1/8/25 1300
Relinquished by:	Company: HBWS
Relinquished by:	Date/Time: 1/8/25 957
Relinquished by:	Company: CEAP
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No. 41840.3=S.1 001 Thawed

  

Sample Disposal (A Fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Special Instructions/QC Requirements Method of Shipment: FedEx 7112 9568 3434 Date/Time: 1/9/25 957 Date/Time: _____ Date/Time: _____



# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-129380-1

SDG Number: Weekly PFAS

**Login Number: 129380**

**List Source: Eurofins Eaton Analytical Pomona**

**List Number: 1**

**Creator: Sanchez Velasquez, Gustavo**

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

