

# ANALYTICAL REPORT

## PREPARED FOR

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## JOB DESCRIPTION

RED-HILL  
PFAS - Halawa Shaft Viewing Pool

## JOB NUMBER

380-161197-1

# Eurofins Eaton Analytical Pomona

## Job Notes

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

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

## Compliance Statement

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

## Authorization



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## Definitions/Glossary

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

### 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: 380-161197-1

**Job ID: 380-161197-1**

**Eurofins Eaton Analytical Pomona**

### **Job Narrative 380-161197-1**

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

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

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

#### **Receipt**

The samples were received on 7/17/2025 9:33 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 4.1°C.

#### **PFAS**

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

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## Detection Summary

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

### Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-161197-1

| Analyte                              | Result | Qualifier | RL  | Unit | Dil Fac | D | Method | Prep Type |
|--------------------------------------|--------|-----------|-----|------|---------|---|--------|-----------|
| Perfluorohexanesulfonic acid (PFHxS) | 3.4    |           | 2.0 | ng/L | 1       |   | 533    | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 3.6    |           | 2.0 | ng/L | 1       |   | 533    | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)  | 3.4    |           | 2.0 | ng/L | 1       |   | 537.1  | Total/NA  |
| Perfluorohexanesulfonic acid (PFHxS) | 3.7    |           | 2.0 | ng/L | 1       |   | 537.1  | Total/NA  |

### Client Sample ID: HALAWA SHAFT VIEWING POOL Blank

Lab Sample ID: 380-161197-2

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: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-161197-1

Date Collected: 07/15/25 10:01

Matrix: Water

Date Received: 07/17/25 09:33

## 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<br>e-1-sulfonic acid (11Cl-PF3OUdS) | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 9-Chlorohexadecafluoro-3-oxanonan<br>e-1-sulfonic acid(9Cl-PF3ONS)     | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 4,8-Dioxa-3H-perfluorononanoic acid<br>(ADONA)                         | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Hexafluoropropylene Oxide Dimer<br>Acid (HFPO-DA/GenX)                 | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                                    | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluorodecanoic acid (PFDA)                                          | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluorododecanoic acid (PFDoA)                                       | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluoroheptanoic acid (PFHpA)                                        | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluorohexanesulfonic acid<br>(PFHxS)                                | 3.4       |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluorohexanoic acid (PFHxA)                                         | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluorononanoic acid (PFNA)                                          | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluorooctanesulfonic acid<br>(PFOS)                                 | 3.6       |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluorooctanoic acid (PFOA)                                          | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluoroundecanoic acid (PFUnA)                                       | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluorobutanoic acid (PFBA)                                          | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 1H,1H,2H,2H-Perfluorodecane<br>sulfonic acid (8:2 FTS)                 | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 1H,1H,2H,2H-Perfluorohexane<br>sulfonic acid (4:2 FTS)                 | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 1H,1H,2H,2H-Perfluorooctane sulfonic<br>acid (6:2 FTS)                 | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Nonafluoro-3,6-dioxaheptanoic acid<br>(NFDHA)                          | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluoro (2-ethoxyethane) sulfonic<br>acid (PFEESA)                   | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluoro-3-methoxypropanoic acid<br>(PFMPA)                           | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluoro-4-methoxybutanoic acid<br>(PFMBA)                            | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluoropentanoic acid (PFPeA)                                        | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluoroheptanesulfonic acid<br>(PFHpS)                               | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Perfluoropentanesulfonic acid<br>(PFPeS)                               | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| Isotope Dilution                                                       | %Recovery | Qualifier | Limits   |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C3 HFPO-DA                                                           | 79        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C6 PFDA                                                              | 77        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C5 PFHxA                                                             | 81        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C4 PFHpA                                                             | 77        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C8 PFOA                                                              | 77        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C9 PFNA                                                              | 75        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C7 PFUnA                                                             | 85        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C2 PFDoA                                                             | 89        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C4 PFBA                                                              | 86        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C5 PFPeA                                                             | 88        |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C3 PFBS                                                              | 110       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C3 PFHxS                                                             | 111       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:02 | 1       |

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# Client Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-161197-1

Date Collected: 07/15/25 10:01

Matrix: Water

Date Received: 07/17/25 09:33

## 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 | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C2-4:2-FTS     | 113       |           | 50 - 200 | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C2-6:2-FTS     | 119       |           | 50 - 200 | 07/23/25 17:13 | 07/24/25 14:02 | 1       |
| 13C2-8:2-FTS     | 103       |           | 50 - 200 | 07/23/25 17:13 | 07/24/25 14:02 | 1       |

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

| Analyte                                                            | Result    | Qualifier | RL       | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------------------------------------|-----------|-----------|----------|------|---|----------------|----------------|---------|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)                | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                                | 3.4       |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluoroundecanoic acid (PFUnA)                                   | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)           | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)            | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorohexanoic acid (PFHxA)                                     | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorododecanoic acid (PFDoA)                                   | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorooctanoic acid (PFOA)                                      | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorodecanoic acid (PFDA)                                      | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                               | 3.7       |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                                | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluoroheptanoic acid (PFHpA)                                    | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorononanoic acid (PFNA)                                      | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorotetradecanoic acid (PFTA)                                 | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Perfluorotridecanoic acid (PFTrDA)                                 | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)    | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| 4,8-Dioxo-3H-perfluorononanoic acid (ADONA)                        | <2.0      |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| Surrogate                                                          | %Recovery | Qualifier | Limits   |      |   | Prepared       | Analyzed       | Dil Fac |
| d5-NEtFOSAA                                                        | 104       |           | 70 - 130 |      |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| 13C2 PFHxA                                                         | 105       |           | 70 - 130 |      |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| 13C2 PFDA                                                          | 110       |           | 70 - 130 |      |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |
| 13C3-GenX                                                          | 99        |           | 70 - 130 |      |   | 07/21/25 03:00 | 07/21/25 19:10 | 1       |

Client Sample ID: HALAWA SHAFT VIEWING POOL Blank

Lab Sample ID: 380-161197-2

Date Collected: 07/15/25 10:01

Matrix: Water

Date Received: 07/17/25 09:33

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

| Analyte                                                            | Result | Qualifier | RL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------------------------------------|--------|-----------|-----|------|---|----------------|----------------|---------|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0   |           | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)    | <2.0   |           | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 4,8-Dioxo-3H-perfluorononanoic acid (ADONA)                        | <2.0   |           | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL Blank

Lab Sample ID: 380-161197-2

Date Collected: 07/15/25 10:01

Matrix: Water

Date Received: 07/17/25 09:33

## 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 |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                 | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluorodecanoic acid (PFDA)                       | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluorododecanoic acid (PFDoA)                    | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluoroheptanoic acid (PFHpA)                     | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluorohexanoic acid (PFHxA)                      | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluorononanoic acid (PFNA)                       | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                 | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluorooctanoic acid (PFOA)                       | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluoroundecanoic acid (PFUnA)                    | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluorobutanoic acid (PFBA)                       | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)          | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)   | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluoro-3-methoxypropanoic acid (PFMPA)           | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluoro-4-methoxybutanoic acid (PFMBA)            | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluoropentanoic acid (PFPeA)                     | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluoroheptanesulfonic acid (PFHpS)               | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Perfluoropentanesulfonic acid (PFPeS)               | <2.0      |           | 2.0      | ng/L |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| Isotope Dilution                                    | %Recovery | Qualifier | Limits   |      |   | Prepared       | Analyzed       | Dil Fac |
| 13C3 HFPO-DA                                        | 104       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C6 PFDA                                           | 108       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C5 PFHxA                                          | 111       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C4 PFHpA                                          | 109       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C8 PFOA                                           | 113       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C9 PFNA                                           | 112       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C7 PFUnA                                          | 109       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C2 PFDoA                                          | 106       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C4 PFBA                                           | 107       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C5 PFPeA                                          | 111       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C3 PFBS                                           | 113       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C3 PFHxS                                          | 113       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C8 PFOS                                           | 105       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C2-4:2-FTS                                        | 111       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C2-6:2-FTS                                        | 109       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |
| 13C2-8:2-FTS                                        | 101       |           | 50 - 200 |      |   | 07/23/25 17:13 | 07/24/25 14:12 | 1       |

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# Client Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL Blank

Lab Sample ID: 380-161197-2

Date Collected: 07/15/25 10:01

Matrix: Water

Date Received: 07/17/25 09:33

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

| Analyte                                                            | Result | Qualifier | RL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------------------------------------|--------|-----------|-----|------|---|----------------|----------------|---------|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)                | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                                | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluoroundecanoic acid (PFUnA)                                   | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)           | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)            | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorohexanoic acid (PFHxA)                                     | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorododecanoic acid (PFDoA)                                   | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorooctanoic acid (PFOA)                                      | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorodecanoic acid (PFDA)                                      | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                               | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                                | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluoroheptanoic acid (PFHpA)                                    | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorononanoic acid (PFNA)                                      | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorotetradecanoic acid (PFTA)                                 | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| Perfluorotridecanoic acid (PFTrDA)                                 | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)    | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | <2.0   |           | 2.0 | ng/L |   | 07/21/25 03:00 | 07/21/25 19:19 | 1       |

| Surrogate   | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|-------------|-----------|-----------|----------|----------------|----------------|---------|
| d5-NEtFOSAA | 109       |           | 70 - 130 | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| 13C2 PFHxA  | 110       |           | 70 - 130 | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| 13C2 PFDA   | 116       |           | 70 - 130 | 07/21/25 03:00 | 07/21/25 19:19 | 1       |
| 13C3-GenX   | 102       |           | 70 - 130 | 07/21/25 03:00 | 07/21/25 19:19 | 1       |

## Action Limit Summary

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-161197-1**

### 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)                | 3.4    |           | ng/L | 10     | 2.0 | 533    | Total/NA  |
| Perfluorononanoic acid (PFNA)                       | <2.0   |           | ng/L | 10     | 2.0 | 533    | Total/NA  |
| Perfluorooctanesulfonic acid (PFOS)                 | 3.6    |           | 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)                 | 3.4    |           | 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)                | 3.7    |           | 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: HALAWA SHAFT VIEWING POOL Blank**

**Lab Sample ID: 380-161197-2**

### 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: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

## 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                   | d5NEFOS<br>(70-130)                            | PFHxA<br>(70-130) | PFDA<br>(70-130) | GenX<br>(70-130) |
| 380-161197-1            | HALAWA SHAFT VIEWING POOL          | 104                                            | 105               | 110              | 99               |
| 380-161197-2            | HALAWA SHAFT VIEWING<br>POOL Blank | 109                                            | 110               | 116              | 102              |
| 380-161493-A-1-A MS     | Matrix Spike                       | 102                                            | 100               | 106              | 96               |
| 380-161493-A-1-B MSD    | Matrix Spike Duplicate             | 94                                             | 102               | 104              | 98               |
| LCS 380-163978/22-A     | Lab Control Sample                 | 95                                             | 100               | 104              | 92               |
| MBL 380-163978/20-A     | Method Blank                       | 96                                             | 101               | 105              | 95               |
| MRL 380-163978/21-A     | Lab Control Sample                 | 100                                            | 102               | 109              | 99               |
| <b>Surrogate Legend</b> |                                    |                                                |                   |                  |                  |
| 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: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

## 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<br>(50-200)                                    | C6PFDA<br>(50-200) | 13C5PHA<br>(50-200) | C4PFHA<br>(50-200) | C8PFOA<br>(50-200) | C9PFNA<br>(50-200) | 13C7PUA<br>(50-200) | PFDaA<br>(50-200) |
| 380-161193-E-1-A MS     | Matrix Spike                       | 76                                                    | 91                 | 77                  | 79                 | 85                 | 88                 | 93                  | 93                |
| 380-161193-F-1-A MSD    | Matrix Spike Duplicate             | 98                                                    | 108                | 101                 | 99                 | 105                | 107                | 107                 | 107               |
| 380-161197-1            | HALAWA SHAFT VIEWING<br>POOL       | 79                                                    | 77                 | 81                  | 77                 | 77                 | 75                 | 85                  | 89                |
| 380-161197-2            | HALAWA SHAFT VIEWING<br>POOL Blank | 104                                                   | 108                | 111                 | 109                | 113                | 112                | 109                 | 106               |
| LCS 380-164712/22-A     | Lab Control Sample                 | 106                                                   | 106                | 109                 | 104                | 109                | 107                | 105                 | 102               |
| MBL 380-164712/20-A     | Method Blank                       | 109                                                   | 108                | 113                 | 110                | 112                | 113                | 110                 | 105               |
| MRL 380-164712/21-A     | Lab Control Sample                 | 105                                                   | 108                | 106                 | 104                | 111                | 109                | 108                 | 105               |
|                         |                                    | Percent Isotope Dilution Recovery (Acceptance Limits) |                    |                     |                    |                    |                    |                     |                   |
| Lab Sample ID           | Client Sample ID                   | PFBA<br>(50-200)                                      | PFPeA<br>(50-200)  | C3PFBS<br>(50-200)  | C3PFHS<br>(50-200) | C8PFOS<br>(50-200) | 42FTS<br>(50-200)  | 62FTS<br>(50-200)   | 82FTS<br>(50-200) |
| 380-161193-E-1-A MS     | Matrix Spike                       | 76                                                    | 78                 | 111                 | 115                | 109                | 118                | 141                 | 114               |
| 380-161193-F-1-A MSD    | Matrix Spike Duplicate             | 95                                                    | 97                 | 112                 | 116                | 107                | 103                | 107                 | 101               |
| 380-161197-1            | HALAWA SHAFT VIEWING<br>POOL       | 86                                                    | 88                 | 110                 | 111                | 106                | 113                | 119                 | 103               |
| 380-161197-2            | HALAWA SHAFT VIEWING<br>POOL Blank | 107                                                   | 111                | 113                 | 113                | 105                | 111                | 109                 | 101               |
| LCS 380-164712/22-A     | Lab Control Sample                 | 106                                                   | 107                | 112                 | 113                | 106                | 101                | 100                 | 98                |
| MBL 380-164712/20-A     | Method Blank                       | 105                                                   | 110                | 116                 | 116                | 108                | 109                | 105                 | 98                |
| MRL 380-164712/21-A     | Lab Control Sample                 | 106                                                   | 113                | 114                 | 114                | 110                | 111                | 104                 | 101               |
| <b>Surrogate Legend</b> |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| HFPODA = 13C3 HFPO-DA   |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| C6PFDA = 13C6 PFDA      |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| 13C5PHA = 13C5 PFHxA    |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| C4PFHA = 13C4 PFHpA     |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| C8PFOA = 13C8 PFOA      |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| C9PFNA = 13C9 PFNA      |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| 13C7PUA = 13C7 PFUnA    |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| PFDaA = 13C2 PFDaA      |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| PFBA = 13C4 PFBA        |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| PFPeA = 13C5 PFPeA      |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| C3PFBS = 13C3 PFBS      |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| C3PFHS = 13C3 PFHxS     |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| C8PFOS = 13C8 PFOS      |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| 42FTS = 13C2-4:2-FTS    |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| 62FTS = 13C2-6:2-FTS    |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |
| 82FTS = 13C2-8:2-FTS    |                                    |                                                       |                    |                     |                    |                    |                    |                     |                   |

# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-164712/20-A

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 164712

| Analyte                                                            | MBL Result | MBL Qualifier | RL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------------------------------------|------------|---------------|-----|------|---|----------------|----------------|---------|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS) | <0.30      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)     | <0.30      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | <0.60      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)                | <1.0       |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                                | <0.37      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluorodecanoic acid (PFDA)                                      | <0.31      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluorododecanoic acid (PFDoA)                                   | <0.54      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluoroheptanoic acid (PFHpA)                                    | <0.39      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                               | <0.32      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluorohexanoic acid (PFHxA)                                     | <0.46      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluorononanoic acid (PFNA)                                      | <0.40      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                                | <0.43      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluorooctanoic acid (PFOA)                                      | <0.38      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluoroundecanoic acid (PFUnA)                                   | <0.42      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluorobutanoic acid (PFBA)                                      | <0.69      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)                | <0.38      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)                | <0.37      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)                | <0.48      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)                         | <0.47      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)                  | <0.25      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluoro-3-methoxypropanoic acid (PFMPA)                          | <0.46      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluoro-4-methoxybutanoic acid (PFMBA)                           | <0.15      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluoropentanoic acid (PFPeA)                                    | <0.38      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluoroheptanesulfonic acid (PFHpS)                              | <0.36      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| Perfluoropentanesulfonic acid (PFPeS)                              | <0.39      |               | 2.0 | ng/L |   | 07/23/25 17:13 | 07/24/25 11:58 | 1       |

| Isotope Dilution | MBL %Recovery | MBL Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|---------------|---------------|----------|----------------|----------------|---------|
| 13C3 HFPO-DA     | 109           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C6 PFDA        | 108           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C5 PFHxA       | 113           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C4 PFHpA       | 110           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C8 PFOA        | 112           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C9 PFNA        | 113           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C7 PFUnA       | 110           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C2 PFDoA       | 105           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C4 PFBA        | 105           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C5 PFPeA       | 110           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C3 PFBS        | 116           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C3 PFHxS       | 116           |               | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |

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# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-164712/20-A

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 164712

| Isotope Dilution | MBL<br>%Recovery | MBL<br>Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|------------------|------------------|----------|----------------|----------------|---------|
| 13C8 PFOS        | 108              |                  | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C2-4:2-FTS     | 109              |                  | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C2-6:2-FTS     | 105              |                  | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |
| 13C2-8:2-FTS     | 98               |                  | 50 - 200 | 07/23/25 17:13 | 07/24/25 11:58 | 1       |

Lab Sample ID: LCS 380-164712/22-A

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 164712

| Analyte                                                            | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec<br>Limits |
|--------------------------------------------------------------------|----------------|---------------|------------------|------|---|------|----------------|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 60.1           | 63.2          |                  | ng/L |   | 105  | 70 - 130       |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)     | 60.1           | 60.5          |                  | ng/L |   | 101  | 70 - 130       |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | 60.1           | 63.6          |                  | ng/L |   | 106  | 70 - 130       |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)                | 60.1           | 60.4          |                  | ng/L |   | 101  | 70 - 130       |
| Perfluorobutanesulfonic acid (PFBS)                                | 60.1           | 59.8          |                  | ng/L |   | 99   | 70 - 130       |
| Perfluorodecanoic acid (PFDA)                                      | 60.1           | 61.7          |                  | ng/L |   | 103  | 70 - 130       |
| Perfluorododecanoic acid (PFDoA)                                   | 60.1           | 62.7          |                  | ng/L |   | 104  | 70 - 130       |
| Perfluoroheptanoic acid (PFHpA)                                    | 60.1           | 63.2          |                  | ng/L |   | 105  | 70 - 130       |
| Perfluorohexanesulfonic acid (PFHxS)                               | 60.1           | 59.6          |                  | ng/L |   | 99   | 70 - 130       |
| Perfluorohexanoic acid (PFHxA)                                     | 60.1           | 62.3          |                  | ng/L |   | 104  | 70 - 130       |
| Perfluorononanoic acid (PFNA)                                      | 60.1           | 61.2          |                  | ng/L |   | 102  | 70 - 130       |
| Perfluorooctanesulfonic acid (PFOS)                                | 60.1           | 63.2          |                  | ng/L |   | 105  | 70 - 130       |
| Perfluorooctanoic acid (PFOA)                                      | 60.1           | 59.6          |                  | ng/L |   | 99   | 70 - 130       |
| Perfluoroundecanoic acid (PFUnA)                                   | 60.1           | 64.7          |                  | ng/L |   | 108  | 70 - 130       |
| Perfluorobutanoic acid (PFBA)                                      | 60.1           | 60.6          |                  | ng/L |   | 101  | 70 - 130       |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)                | 60.1           | 62.2          |                  | ng/L |   | 103  | 70 - 130       |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)                | 60.1           | 65.5          |                  | ng/L |   | 109  | 70 - 130       |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)                | 60.1           | 63.8          |                  | ng/L |   | 106  | 70 - 130       |
| Nonfluoro-3,6-dioxahexanoic acid (NFDHA)                           | 60.1           | 61.3          |                  | ng/L |   | 102  | 70 - 130       |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)                 | 60.1           | 56.7          |                  | ng/L |   | 94   | 70 - 130       |
| Perfluoro-3-methoxypropanoic acid (PFMPA)                          | 60.1           | 61.1          |                  | ng/L |   | 102  | 70 - 130       |
| Perfluoro-4-methoxybutanoic acid (PFMBA)                           | 60.1           | 60.3          |                  | ng/L |   | 100  | 70 - 130       |
| Perfluoropentanoic acid (PFPeA)                                    | 60.1           | 59.4          |                  | ng/L |   | 99   | 70 - 130       |
| Perfluoroheptanesulfonic acid (PFHpS)                              | 60.1           | 63.7          |                  | ng/L |   | 106  | 70 - 130       |

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# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-164712/22-A

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 164712

| Analyte                               | Spike Added | LCS Result | LCS Qualifier | Unit     | D | %Rec | %Rec Limits |
|---------------------------------------|-------------|------------|---------------|----------|---|------|-------------|
| Perfluoropentanesulfonic acid (PFPeS) | 60.1        | 58.9       |               | ng/L     |   | 98   | 70 - 130    |
|                                       |             |            |               |          |   |      |             |
|                                       |             | LCS        | LCS           |          |   |      |             |
|                                       |             | %Recovery  | Qualifier     | Limits   |   |      |             |
| 13C3 HFPO-DA                          | 106         |            |               | 50 - 200 |   |      |             |
| 13C6 PFDA                             | 106         |            |               | 50 - 200 |   |      |             |
| 13C5 PFHxA                            | 109         |            |               | 50 - 200 |   |      |             |
| 13C4 PFHpA                            | 104         |            |               | 50 - 200 |   |      |             |
| 13C8 PFOA                             | 109         |            |               | 50 - 200 |   |      |             |
| 13C9 PFNA                             | 107         |            |               | 50 - 200 |   |      |             |
| 13C7 PFUnA                            | 105         |            |               | 50 - 200 |   |      |             |
| 13C2 PFDoA                            | 102         |            |               | 50 - 200 |   |      |             |
| 13C4 PFBA                             | 106         |            |               | 50 - 200 |   |      |             |
| 13C5 PFPeA                            | 107         |            |               | 50 - 200 |   |      |             |
| 13C3 PFBS                             | 112         |            |               | 50 - 200 |   |      |             |
| 13C3 PFHxS                            | 113         |            |               | 50 - 200 |   |      |             |
| 13C8 PFOS                             | 106         |            |               | 50 - 200 |   |      |             |
| 13C2-4:2-FTS                          | 101         |            |               | 50 - 200 |   |      |             |
| 13C2-6:2-FTS                          | 100         |            |               | 50 - 200 |   |      |             |
| 13C2-8:2-FTS                          | 98          |            |               | 50 - 200 |   |      |             |

Lab Sample ID: MRL 380-164712/21-A

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 164712

| Analyte                                                            | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------------------------------------|-------------|------------|---------------|------|---|------|-------------|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 2.00        | 2.09       | J             | ng/L |   | 104  | 50 - 150    |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)     | 2.00        | 1.92       | J             | ng/L |   | 96   | 50 - 150    |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | 2.00        | 2.18       | J             | ng/L |   | 109  | 50 - 150    |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)                | 2.00        | 1.87       | J             | ng/L |   | 93   | 50 - 150    |
| Perfluorobutanesulfonic acid (PFBS)                                | 2.00        | 1.98       | J             | ng/L |   | 99   | 50 - 150    |
| Perfluorodecanoic acid (PFDA)                                      | 2.00        | 2.02       | J             | ng/L |   | 101  | 50 - 150    |
| Perfluorododecanoic acid (PFDoA)                                   | 2.00        | 2.06       | J             | ng/L |   | 103  | 50 - 150    |
| Perfluoroheptanoic acid (PFHpA)                                    | 2.00        | 2.21       | J             | ng/L |   | 110  | 50 - 150    |
| Perfluorohexanesulfonic acid (PFHxS)                               | 2.00        | 2.09       | J             | ng/L |   | 104  | 50 - 150    |
| Perfluorohexanoic acid (PFHxA)                                     | 2.00        | 1.97       | J             | ng/L |   | 98   | 50 - 150    |
| Perfluorononanoic acid (PFNA)                                      | 2.00        | 2.01       | J             | ng/L |   | 100  | 50 - 150    |
| Perfluorooctanesulfonic acid (PFOS)                                | 2.00        | 2.23       | J             | ng/L |   | 111  | 50 - 150    |
| Perfluorooctanoic acid (PFOA)                                      | 2.00        | 2.19       | J             | ng/L |   | 109  | 50 - 150    |
| Perfluoroundecanoic acid (PFUnA)                                   | 2.00        | 2.03       | J             | ng/L |   | 102  | 50 - 150    |
| Perfluorobutanoic acid (PFBA)                                      | 2.00        | 2.13       | J             | ng/L |   | 106  | 50 - 150    |

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# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-164712/21-A

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 164712

| Analyte                                             | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|-----------------------------------------------------|-------------|------------|---------------|------|---|------|-------------|
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | 2.00        | 2.18       | J             | ng/L |   | 109  | 50 - 150    |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | 2.00        | 2.07       | J             | ng/L |   | 104  | 50 - 150    |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 2.00        | 2.11       | J             | ng/L |   | 105  | 50 - 150    |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)          | 2.00        | 2.10       | J             | ng/L |   | 105  | 50 - 150    |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)    | 2.00        | 1.81       | J             | ng/L |   | 91   | 50 - 150    |
| Perfluoro-3-methoxypropanoic acid (PFMPA)           | 2.00        | 2.11       | J             | ng/L |   | 105  | 50 - 150    |
| Perfluoro-4-methoxybutanoic acid (PFMBA)            | 2.00        | 1.87       | J             | ng/L |   | 93   | 50 - 150    |
| Perfluoropentanoic acid (PFPeA)                     | 2.00        | 2.09       | J             | ng/L |   | 104  | 50 - 150    |
| Perfluoroheptanesulfonic acid (PFHpS)               | 2.00        | 2.16       | J             | ng/L |   | 108  | 50 - 150    |
| Perfluoropentanesulfonic acid (PFPeS)               | 2.00        | 1.91       | J             | ng/L |   | 95   | 50 - 150    |

| Isotope Dilution | %Recovery | MRL Qualifier | MRL Limits |
|------------------|-----------|---------------|------------|
| 13C3 HFPO-DA     | 105       |               | 50 - 200   |
| 13C6 PFDA        | 108       |               | 50 - 200   |
| 13C5 PFHxA       | 106       |               | 50 - 200   |
| 13C4 PFHpA       | 104       |               | 50 - 200   |
| 13C8 PFOA        | 111       |               | 50 - 200   |
| 13C9 PFNA        | 109       |               | 50 - 200   |
| 13C7 PFUnA       | 108       |               | 50 - 200   |
| 13C2 PFDoA       | 105       |               | 50 - 200   |
| 13C4 PFBA        | 106       |               | 50 - 200   |
| 13C5 PFPeA       | 113       |               | 50 - 200   |
| 13C3 PFBS        | 114       |               | 50 - 200   |
| 13C3 PFHxS       | 114       |               | 50 - 200   |
| 13C8 PFOS        | 110       |               | 50 - 200   |
| 13C2-4:2-FTS     | 111       |               | 50 - 200   |
| 13C2-6:2-FTS     | 104       |               | 50 - 200   |
| 13C2-8:2-FTS     | 101       |               | 50 - 200   |

Lab Sample ID: 380-161193-E-1-A MS

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 164712

| Analyte                                                            | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------------------------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|-------------|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0          |                  | 120         | 123       |              | ng/L |   | 102  | 70 - 130    |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)     | <2.0          |                  | 120         | 123       |              | ng/L |   | 102  | 70 - 130    |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | <2.0          |                  | 120         | 114       |              | ng/L |   | 95   | 70 - 130    |

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-161193-E-1-A MS

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 164712

| Analyte                                             | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|-----------------------------------------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|-------------|
| Hexafluoropropylene Oxide                           | <2.0          |                  | 120         | 119       |              | ng/L |   | 99   | 70 - 130    |
| Dimer Acid (HFPO-DA/GenX)                           |               |                  |             |           |              |      |   |      |             |
| Perfluorobutanesulfonic acid (PFBS)                 | <2.0          |                  | 120         | 120       |              | ng/L |   | 99   | 70 - 130    |
| Perfluorodecanoic acid (PFDA)                       | <2.0          |                  | 120         | 120       |              | ng/L |   | 100  | 70 - 130    |
| Perfluorododecanoic acid (PFDoA)                    | <2.0          |                  | 120         | 123       |              | ng/L |   | 102  | 70 - 130    |
| Perfluoroheptanoic acid (PFHpA)                     | <2.0          |                  | 120         | 121       |              | ng/L |   | 100  | 70 - 130    |
| Perfluorohexanesulfonic acid (PFHxS)                | <2.0          |                  | 120         | 116       |              | ng/L |   | 97   | 70 - 130    |
| Perfluorohexanoic acid (PFHxA)                      | <2.0          |                  | 120         | 125       |              | ng/L |   | 104  | 70 - 130    |
| Perfluorononanoic acid (PFNA)                       | <2.0          |                  | 120         | 122       |              | ng/L |   | 101  | 70 - 130    |
| Perfluorooctanesulfonic acid (PFOS)                 | <2.0          |                  | 120         | 124       |              | ng/L |   | 103  | 70 - 130    |
| Perfluorooctanoic acid (PFOA)                       | <2.0          |                  | 120         | 122       |              | ng/L |   | 101  | 70 - 130    |
| Perfluoroundecanoic acid (PFUnA)                    | <2.0          |                  | 120         | 125       |              | ng/L |   | 104  | 70 - 130    |
| Perfluorobutanoic acid (PFBA)                       | <2.0          |                  | 120         | 122       |              | ng/L |   | 102  | 70 - 130    |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.0          |                  | 120         | 120       |              | ng/L |   | 99   | 70 - 130    |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.0          |                  | 120         | 119       |              | ng/L |   | 99   | 70 - 130    |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <2.0          |                  | 120         | 123       |              | ng/L |   | 102  | 70 - 130    |
| Nonafluoro-3,6-dioxahexanoic acid (NFDHA)           | <2.0          |                  | 120         | 113       |              | ng/L |   | 94   | 70 - 130    |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)    | <2.0          |                  | 120         | 117       |              | ng/L |   | 97   | 70 - 130    |
| Perfluoro-3-methoxypropanoic acid (PFMPA)           | <2.0          |                  | 120         | 112       |              | ng/L |   | 93   | 70 - 130    |
| Perfluoro-4-methoxybutanoic acid (PFMBA)            | <2.0          |                  | 120         | 112       |              | ng/L |   | 94   | 70 - 130    |
| Perfluoropentanoic acid (PFPeA)                     | <2.0          |                  | 120         | 115       |              | ng/L |   | 96   | 70 - 130    |
| Perfluoroheptanesulfonic acid (PFHpS)               | <2.0          |                  | 120         | 123       |              | ng/L |   | 103  | 70 - 130    |
| Perfluoropentanesulfonic acid (PFPeS)               | <2.0          |                  | 120         | 114       |              | ng/L |   | 95   | 70 - 130    |

| Isotope Dilution | MS %Recovery | MS Qualifier | Limits   |
|------------------|--------------|--------------|----------|
| 13C3 HFPO-DA     | 76           |              | 50 - 200 |
| 13C6 PFDA        | 91           |              | 50 - 200 |
| 13C5 PFHxA       | 77           |              | 50 - 200 |
| 13C4 PFHpA       | 79           |              | 50 - 200 |
| 13C8 PFOA        | 85           |              | 50 - 200 |
| 13C9 PFNA        | 88           |              | 50 - 200 |
| 13C7 PFUnA       | 93           |              | 50 - 200 |
| 13C2 PFDoA       | 93           |              | 50 - 200 |
| 13C4 PFBA        | 76           |              | 50 - 200 |
| 13C5 PFPeA       | 78           |              | 50 - 200 |
| 13C3 PFBS        | 111          |              | 50 - 200 |
| 13C3 PFHxS       | 115          |              | 50 - 200 |
| 13C8 PFOS        | 109          |              | 50 - 200 |

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-161193-E-1-A MS

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 164712

| Isotope Dilution | MS<br>%Recovery | MS<br>Qualifier | Limits   |
|------------------|-----------------|-----------------|----------|
| 13C2-4:2-FTS     | 118             |                 | 50 - 200 |
| 13C2-6:2-FTS     | 141             |                 | 50 - 200 |
| 13C2-8:2-FTS     | 114             |                 | 50 - 200 |

Lab Sample ID: 380-161193-F-1-A MSD

Matrix: Water

Analysis Batch: 164830

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 164712

| Analyte                                                            | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MSD<br>Result | MSD<br>Qualifier | Unit | D | %Rec | %Rec<br>Limits | RPD | RPD<br>Limit |
|--------------------------------------------------------------------|------------------|---------------------|----------------|---------------|------------------|------|---|------|----------------|-----|--------------|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0             |                     | 120            | 121           |                  | ng/L |   | 100  | 70 - 130       | 2   | 30           |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)    | <2.0             |                     | 120            | 120           |                  | ng/L |   | 99   | 70 - 130       | 3   | 30           |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | <2.0             |                     | 120            | 119           |                  | ng/L |   | 99   | 70 - 130       | 5   | 30           |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)                | <2.0             |                     | 120            | 118           |                  | ng/L |   | 98   | 70 - 130       | 1   | 30           |
| Perfluorobutanesulfonic acid (PFBS)                                | <2.0             |                     | 120            | 114           |                  | ng/L |   | 94   | 70 - 130       | 5   | 30           |
| Perfluorodecanoic acid (PFDA)                                      | <2.0             |                     | 120            | 119           |                  | ng/L |   | 99   | 70 - 130       | 1   | 30           |
| Perfluorododecanoic acid (PFDoA)                                   | <2.0             |                     | 120            | 119           |                  | ng/L |   | 99   | 70 - 130       | 3   | 30           |
| Perfluoroheptanoic acid (PFHpA)                                    | <2.0             |                     | 120            | 119           |                  | ng/L |   | 99   | 70 - 130       | 2   | 30           |
| Perfluorohexanesulfonic acid (PFHxS)                               | <2.0             |                     | 120            | 116           |                  | ng/L |   | 96   | 70 - 130       | 1   | 30           |
| Perfluorohexanoic acid (PFHxA)                                     | <2.0             |                     | 120            | 114           |                  | ng/L |   | 95   | 70 - 130       | 9   | 30           |
| Perfluorononanoic acid (PFNA)                                      | <2.0             |                     | 120            | 119           |                  | ng/L |   | 99   | 70 - 130       | 2   | 30           |
| Perfluorooctanesulfonic acid (PFOS)                                | <2.0             |                     | 120            | 124           |                  | ng/L |   | 103  | 70 - 130       | 0   | 30           |
| Perfluorooctanoic acid (PFOA)                                      | <2.0             |                     | 120            | 117           |                  | ng/L |   | 97   | 70 - 130       | 4   | 30           |
| Perfluoroundecanoic acid (PFUnA)                                   | <2.0             |                     | 120            | 124           |                  | ng/L |   | 103  | 70 - 130       | 1   | 30           |
| Perfluorobutanoic acid (PFBA)                                      | <2.0             |                     | 120            | 119           |                  | ng/L |   | 99   | 70 - 130       | 3   | 30           |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)                | <2.0             |                     | 120            | 120           |                  | ng/L |   | 100  | 70 - 130       | 1   | 30           |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)                | <2.0             |                     | 120            | 117           |                  | ng/L |   | 97   | 70 - 130       | 2   | 30           |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)                | <2.0             |                     | 120            | 115           |                  | ng/L |   | 96   | 70 - 130       | 7   | 30           |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)                         | <2.0             |                     | 120            | 106           |                  | ng/L |   | 88   | 70 - 130       | 7   | 30           |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)                 | <2.0             |                     | 120            | 110           |                  | ng/L |   | 92   | 70 - 130       | 6   | 30           |
| Perfluoro-3-methoxypropanoic acid (PFMPA)                          | <2.0             |                     | 120            | 113           |                  | ng/L |   | 94   | 70 - 130       | 1   | 30           |
| Perfluoro-4-methoxybutanoic acid (PFMBA)                           | <2.0             |                     | 120            | 116           |                  | ng/L |   | 97   | 70 - 130       | 3   | 30           |
| Perfluoropentanoic acid (PFPeA)                                    | <2.0             |                     | 120            | 119           |                  | ng/L |   | 99   | 70 - 130       | 3   | 30           |
| Perfluoroheptanesulfonic acid (PFHpS)                              | <2.0             |                     | 120            | 122           |                  | ng/L |   | 101  | 70 - 130       | 2   | 30           |
| Perfluoropentanesulfonic acid (PFPeS)                              | <2.0             |                     | 120            | 112           |                  | ng/L |   | 93   | 70 - 130       | 2   | 30           |

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# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

| Isotope Dilution | MSD MSD   |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 13C3 HFPO-DA     | 98        |           | 50 - 200 |
| 13C6 PFDA        | 108       |           | 50 - 200 |
| 13C5 PFHxA       | 101       |           | 50 - 200 |
| 13C4 PFHpA       | 99        |           | 50 - 200 |
| 13C8 PFOA        | 105       |           | 50 - 200 |
| 13C9 PFNA        | 107       |           | 50 - 200 |
| 13C7 PFUnA       | 107       |           | 50 - 200 |
| 13C2 PFDoA       | 107       |           | 50 - 200 |
| 13C4 PFBA        | 95        |           | 50 - 200 |
| 13C5 PFPeA       | 97        |           | 50 - 200 |
| 13C3 PFBS        | 112       |           | 50 - 200 |
| 13C3 PFHxS       | 116       |           | 50 - 200 |
| 13C8 PFOS        | 107       |           | 50 - 200 |
| 13C2-4:2-FTS     | 103       |           | 50 - 200 |
| 13C2-6:2-FTS     | 107       |           | 50 - 200 |
| 13C2-8:2-FTS     | 101       |           | 50 - 200 |

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

Lab Sample ID: MBL 380-163978/20-A  
Matrix: Water  
Analysis Batch: 164124

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 163978

| 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 |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorooctanesulfonic acid (PFOS)                                | <0.43     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluoroundecanoic acid (PFUnA)                                   | <0.42     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)           | <0.58     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)            | <0.42     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorohexanoic acid (PFHxA)                                     | <0.46     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorododecanoic acid (PFDoA)                                   | <0.54     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorooctanoic acid (PFOA)                                      | <0.38     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorodecanoic acid (PFDA)                                      | <0.31     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorohexanesulfonic acid (PFHxS)                               | <0.32     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorobutanesulfonic acid (PFBS)                                | <0.37     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluoroheptanoic acid (PFHpA)                                    | <0.39     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorononanoic acid (PFNA)                                      | <0.40     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorotetradecanoic acid (PFTA)                                 | <0.54     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Perfluorotridecanoic acid (PFTTrDA)                                | <0.36     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)    | <0.30     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <0.30     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | <0.60     |           | 2.0      | ng/L |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| Surrogate                                                          | MBL MBL   |           | Limits   |      |   | Prepared       | Analyzed       | Dil Fac |
|                                                                    | %Recovery | Qualifier |          |      |   |                |                |         |
| d5-NEtFOSAA                                                        | 96        |           | 70 - 130 |      |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| 13C2 PFHxA                                                         | 101       |           | 70 - 130 |      |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |
| 13C2 PFDA                                                          | 105       |           | 70 - 130 |      |   | 07/21/25 03:00 | 07/21/25 17:12 | 1       |

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# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-163978/20-A

Matrix: Water

Analysis Batch: 164124

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 163978

| Surrogate | MBL %Recovery | MBL Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|-----------|---------------|---------------|----------|----------------|----------------|---------|
| 13C3-GenX | 95            |               | 70 - 130 | 07/21/25 03:00 | 07/21/25 17:12 | 1       |

Lab Sample ID: LCS 380-163978/22-A

Matrix: Water

Analysis Batch: 164124

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 163978

| Analyte                                                            | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------------------------------------|-------------|------------|---------------|------|---|------|-------------|
| Hexafluoropropylene Oxide                                          | 25.1        | 22.2       |               | ng/L |   | 89   | 70 - 130    |
| Dimer Acid (HFPO-DA/GenX)                                          |             |            |               |      |   |      |             |
| Perfluorooctanesulfonic acid (PFOS)                                | 25.1        | 25.1       |               | ng/L |   | 100  | 70 - 130    |
| Perfluoroundecanoic acid (PFUnA)                                   | 25.1        | 26.0       |               | ng/L |   | 104  | 70 - 130    |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)           | 25.1        | 24.0       |               | ng/L |   | 96   | 70 - 130    |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)            | 25.1        | 23.3       |               | ng/L |   | 93   | 70 - 130    |
| Perfluorohexanoic acid (PFHxA)                                     | 25.1        | 24.0       |               | ng/L |   | 96   | 70 - 130    |
| Perfluorododecanoic acid (PFDoA)                                   | 25.1        | 25.9       |               | ng/L |   | 103  | 70 - 130    |
| Perfluorooctanoic acid (PFOA)                                      | 25.1        | 25.1       |               | ng/L |   | 100  | 70 - 130    |
| Perfluorodecanoic acid (PFDA)                                      | 25.1        | 25.9       |               | ng/L |   | 104  | 70 - 130    |
| Perfluorohexanesulfonic acid (PFHxS)                               | 25.1        | 25.8       |               | ng/L |   | 103  | 70 - 130    |
| Perfluorobutanesulfonic acid (PFBS)                                | 25.1        | 24.9       |               | ng/L |   | 100  | 70 - 130    |
| Perfluoroheptanoic acid (PFHpA)                                    | 25.1        | 24.8       |               | ng/L |   | 99   | 70 - 130    |
| Perfluorononanoic acid (PFNA)                                      | 25.1        | 25.9       |               | ng/L |   | 103  | 70 - 130    |
| Perfluorotetradecanoic acid (PFTA)                                 | 25.1        | 24.8       |               | ng/L |   | 99   | 70 - 130    |
| Perfluorotridecanoic acid (PFTrDA)                                 | 25.1        | 27.2       |               | ng/L |   | 109  | 70 - 130    |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)     | 25.1        | 25.7       |               | ng/L |   | 102  | 70 - 130    |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 25.1        | 26.1       |               | ng/L |   | 104  | 70 - 130    |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | 25.1        | 24.6       |               | ng/L |   | 98   | 70 - 130    |

| Surrogate   | LCS %Recovery | LCS Qualifier | Limits   |
|-------------|---------------|---------------|----------|
| d5-NEtFOSAA | 95            |               | 70 - 130 |
| 13C2 PFHxA  | 100           |               | 70 - 130 |
| 13C2 PFDA   | 104           |               | 70 - 130 |
| 13C3-GenX   | 92            |               | 70 - 130 |

# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-163978/21-A

Matrix: Water

Analysis Batch: 164124

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 163978

| Analyte                                                            | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|--------------------------------------------------------------------|-------------|------------|---------------|------|---|------|-------------|
| Hexafluoropropylene Oxide                                          | 2.00        | 1.97       | J             | ng/L |   | 98   | 50 - 150    |
| Dimer Acid (HFPO-DA/GenX)                                          |             |            |               |      |   |      |             |
| Perfluorooctanesulfonic acid (PFOS)                                | 2.00        | 2.06       | J             | ng/L |   | 103  | 50 - 150    |
| Perfluoroundecanoic acid (PFUnA)                                   | 2.00        | 2.22       | J             | ng/L |   | 111  | 50 - 150    |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)           | 2.00        | 2.14       | J             | ng/L |   | 107  | 50 - 150    |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)            | 2.00        | 2.11       | J             | ng/L |   | 105  | 50 - 150    |
| Perfluorohexanoic acid (PFHxA)                                     | 2.00        | 2.12       | J             | ng/L |   | 106  | 50 - 150    |
| Perfluorododecanoic acid (PFDoA)                                   | 2.00        | 2.12       | J             | ng/L |   | 106  | 50 - 150    |
| Perfluorooctanoic acid (PFOA)                                      | 2.00        | 2.14       | J             | ng/L |   | 107  | 50 - 150    |
| Perfluorodecanoic acid (PFDA)                                      | 2.00        | 2.19       | J             | ng/L |   | 109  | 50 - 150    |
| Perfluorohexanesulfonic acid (PFHxS)                               | 2.00        | 2.26       | J             | ng/L |   | 113  | 50 - 150    |
| Perfluorobutanesulfonic acid (PFBS)                                | 2.00        | 2.16       | J             | ng/L |   | 108  | 50 - 150    |
| Perfluoroheptanoic acid (PFHpA)                                    | 2.00        | 2.10       | J             | ng/L |   | 105  | 50 - 150    |
| Perfluorononanoic acid (PFNA)                                      | 2.00        | 2.25       | J             | ng/L |   | 112  | 50 - 150    |
| Perfluorotetradecanoic acid (PFTA)                                 | 2.00        | 1.86       | J             | ng/L |   | 93   | 50 - 150    |
| Perfluorotridecanoic acid (PFTrDA)                                 | 2.00        | 2.26       | J             | ng/L |   | 113  | 50 - 150    |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)     | 2.00        | 2.18       | J             | ng/L |   | 109  | 50 - 150    |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 2.00        | 2.20       | J             | ng/L |   | 110  | 50 - 150    |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | 2.00        | 2.18       | J             | ng/L |   | 109  | 50 - 150    |

| Surrogate   | MRL %Recovery | MRL Qualifier | Limits   |
|-------------|---------------|---------------|----------|
| d5-NEtFOSAA | 100           |               | 70 - 130 |
| 13C2 PFHxA  | 102           |               | 70 - 130 |
| 13C2 PFDA   | 109           |               | 70 - 130 |
| 13C3-GenX   | 99            |               | 70 - 130 |

Lab Sample ID: 380-161493-A-1-A MS

Matrix: Water

Analysis Batch: 164124

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 163978

| Analyte                                                  | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|----------------------------------------------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|-------------|
| Hexafluoropropylene Oxide                                | <2.0          |                  | 25.1        | 23.3      |              | ng/L |   | 93   | 70 - 130    |
| Dimer Acid (HFPO-DA/GenX)                                |               |                  |             |           |              |      |   |      |             |
| Perfluorooctanesulfonic acid (PFOS)                      | <2.0          |                  | 25.1        | 25.9      |              | ng/L |   | 103  | 70 - 130    |
| Perfluoroundecanoic acid (PFUnA)                         | <2.0          |                  | 25.1        | 24.8      |              | ng/L |   | 99   | 70 - 130    |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0          |                  | 25.1        | 25.1      |              | ng/L |   | 100  | 70 - 130    |

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-161493-A-1-A MS

Matrix: Water

Analysis Batch: 164124

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 163978

|                                                                           | Sample | Sample    | Spike | MS     | MS        |      |   | %Rec |          |  |
|---------------------------------------------------------------------------|--------|-----------|-------|--------|-----------|------|---|------|----------|--|
| Analyte                                                                   | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits   |  |
| N-ethylperfluorooctanesulfonami<br>doacetic acid (NEtFOSAA)               | <2.0   |           | 25.1  | 25.6   |           | ng/L |   | 102  | 70 - 130 |  |
| Perfluorohexanoic acid (PFHxA)                                            | <2.0   |           | 25.1  | 24.9   |           | ng/L |   | 100  | 70 - 130 |  |
| Perfluorododecanoic acid<br>(PFDoA)                                       | <2.0   |           | 25.1  | 24.8   |           | ng/L |   | 99   | 70 - 130 |  |
| Perfluorooctanoic acid (PFOA)                                             | <2.0   |           | 25.1  | 25.0   |           | ng/L |   | 100  | 70 - 130 |  |
| Perfluorodecanoic acid (PFDA)                                             | <2.0   |           | 25.1  | 24.4   |           | ng/L |   | 97   | 70 - 130 |  |
| Perfluorohexanesulfonic acid<br>(PFHxS)                                   | <2.0   |           | 25.1  | 26.1   |           | ng/L |   | 104  | 70 - 130 |  |
| Perfluorobutanesulfonic acid<br>(PFBS)                                    | <2.0   |           | 25.1  | 26.2   |           | ng/L |   | 104  | 70 - 130 |  |
| Perfluoroheptanoic acid (PFHpA)                                           | <2.0   |           | 25.1  | 25.0   |           | ng/L |   | 100  | 70 - 130 |  |
| Perfluorononanoic acid (PFNA)                                             | <2.0   |           | 25.1  | 25.7   |           | ng/L |   | 103  | 70 - 130 |  |
| Perfluorotetradecanoic acid<br>(PFTA)                                     | <2.0   |           | 25.1  | 22.1   |           | ng/L |   | 88   | 70 - 130 |  |
| Perfluorotridecanoic acid<br>(PFTrDA)                                     | <2.0   |           | 25.1  | 26.4   |           | ng/L |   | 105  | 70 - 130 |  |
| 9-Chlorohexadecafluoro-3-oxan<br>onane-1-sulfonic<br>acid(9Cl-PF3ONS)     | <2.0   |           | 25.1  | 25.7   |           | ng/L |   | 103  | 70 - 130 |  |
| 11-Chloroeicosafluoro-3-oxaund<br>ecane-1-sulfonic acid<br>(11Cl-PF3OUdS) | <2.0   |           | 25.1  | 24.4   |           | ng/L |   | 97   | 70 - 130 |  |
| 4,8-Dioxa-3H-perfluorononanoic<br>acid (ADONA)                            | <2.0   |           | 25.1  | 24.7   |           | ng/L |   | 99   | 70 - 130 |  |
|                                                                           |        |           |       |        |           |      |   |      |          |  |
|                                                                           |        |           |       |        |           |      |   |      |          |  |
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|                                                                           | </     |           |       |        |           |      |   |      |          |  |

Lab Sample ID: 380-161493-A-1-B MSD

Matrix: Water

Analysis Batch: 164124

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 163978

| Analyte                                                  | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|----------------------------------------------------------|---------------|------------------|-------------|------------|---------------|------|---|------|-------------|-----|-----------|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)      | <2.0          |                  | 25.1        | 24.4       |               | ng/L |   | 97   | 70 - 130    | 5   | 30        |
| Perfluorooctanesulfonic acid (PFOS)                      | <2.0          |                  | 25.1        | 26.0       |               | ng/L |   | 104  | 70 - 130    | 1   | 30        |
| Perfluoroundecanoic acid (PFUnA)                         | <2.0          |                  | 25.1        | 26.6       |               | ng/L |   | 106  | 70 - 130    | 7   | 30        |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0          |                  | 25.1        | 24.1       |               | ng/L |   | 96   | 70 - 130    | 4   | 30        |
| N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)  | <2.0          |                  | 25.1        | 24.0       |               | ng/L |   | 96   | 70 - 130    | 7   | 30        |
| Perfluorohexanoic acid (PFHxA)                           | <2.0          |                  | 25.1        | 25.7       |               | ng/L |   | 102  | 70 - 130    | 3   | 30        |
| Perfluorododecanoic acid (PFDoA)                         | <2.0          |                  | 25.1        | 26.0       |               | ng/L |   | 104  | 70 - 130    | 5   | 30        |
| Perfluorooctanoic acid (PFOA)                            | <2.0          |                  | 25.1        | 26.2       |               | ng/L |   | 104  | 70 - 130    | 5   | 30        |
| Perfluorodecanoic acid (PFDA)                            | <2.0          |                  | 25.1        | 25.9       |               | ng/L |   | 103  | 70 - 130    | 6   | 30        |

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-161493-A-1-B MSD

Matrix: Water

Analysis Batch: 164124

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 163978

| Analyte                                                            | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|--------------------------------------------------------------------|---------------|------------------|-------------|------------|---------------|------|---|------|-------------|-----|-----------|
| Perfluorohexanesulfonic acid (PFHxS)                               | <2.0          |                  | 25.1        | 26.2       |               | ng/L |   | 105  | 70 - 130    | 0   | 30        |
| Perfluorobutanesulfonic acid (PFBS)                                | <2.0          |                  | 25.1        | 26.1       |               | ng/L |   | 104  | 70 - 130    | 0   | 30        |
| Perfluoroheptanoic acid (PFHpA)                                    | <2.0          |                  | 25.1        | 26.1       |               | ng/L |   | 104  | 70 - 130    | 4   | 30        |
| Perfluorononanoic acid (PFNA)                                      | <2.0          |                  | 25.1        | 27.5       |               | ng/L |   | 110  | 70 - 130    | 7   | 30        |
| Perfluorotetradecanoic acid (PFTA)                                 | <2.0          |                  | 25.1        | 23.8       |               | ng/L |   | 95   | 70 - 130    | 7   | 30        |
| Perfluorotridecanoic acid (PFTrDA)                                 | <2.0          |                  | 25.1        | 27.7       |               | ng/L |   | 111  | 70 - 130    | 5   | 30        |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)     | <2.0          |                  | 25.1        | 25.6       |               | ng/L |   | 102  | 70 - 130    | 0   | 30        |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0          |                  | 25.1        | 24.1       |               | ng/L |   | 96   | 70 - 130    | 1   | 30        |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)                        | <2.0          |                  | 25.1        | 25.8       |               | ng/L |   | 103  | 70 - 130    | 4   | 30        |
| Surrogate                                                          | MSD %Recovery | MSD Qualifier    | Limits      |            |               |      |   |      |             |     |           |
| d5-NEtFOSAA                                                        | 94            |                  | 70 - 130    |            |               |      |   |      |             |     |           |
| 13C2 PFHxA                                                         | 102           |                  | 70 - 130    |            |               |      |   |      |             |     |           |
| 13C2 PFDA                                                          | 104           |                  | 70 - 130    |            |               |      |   |      |             |     |           |
| 13C3-GenX                                                          | 98            |                  | 70 - 130    |            |               |      |   |      |             |     |           |

# QC Association Summary

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

## LCMS

### Prep Batch: 163978

| Lab Sample ID        | Client Sample ID                | Prep Type | Matrix | Method   | Prep Batch |
|----------------------|---------------------------------|-----------|--------|----------|------------|
| 380-161197-1         | HALAWA SHAFT VIEWING POOL       | Total/NA  | Water  | 537.1 DW |            |
| 380-161197-2         | HALAWA SHAFT VIEWING POOL Blank | Total/NA  | Water  | 537.1 DW |            |
| MBL 380-163978/20-A  | Method Blank                    | Total/NA  | Water  | 537.1 DW |            |
| LCS 380-163978/22-A  | Lab Control Sample              | Total/NA  | Water  | 537.1 DW |            |
| MRL 380-163978/21-A  | Lab Control Sample              | Total/NA  | Water  | 537.1 DW |            |
| 380-161493-A-1-A MS  | Matrix Spike                    | Total/NA  | Water  | 537.1 DW |            |
| 380-161493-A-1-B MSD | Matrix Spike Duplicate          | Total/NA  | Water  | 537.1 DW |            |

### Analysis Batch: 164124

| Lab Sample ID        | Client Sample ID                | Prep Type | Matrix | Method | Prep Batch |
|----------------------|---------------------------------|-----------|--------|--------|------------|
| 380-161197-1         | HALAWA SHAFT VIEWING POOL       | Total/NA  | Water  | 537.1  | 163978     |
| 380-161197-2         | HALAWA SHAFT VIEWING POOL Blank | Total/NA  | Water  | 537.1  | 163978     |
| MBL 380-163978/20-A  | Method Blank                    | Total/NA  | Water  | 537.1  | 163978     |
| LCS 380-163978/22-A  | Lab Control Sample              | Total/NA  | Water  | 537.1  | 163978     |
| MRL 380-163978/21-A  | Lab Control Sample              | Total/NA  | Water  | 537.1  | 163978     |
| 380-161493-A-1-A MS  | Matrix Spike                    | Total/NA  | Water  | 537.1  | 163978     |
| 380-161493-A-1-B MSD | Matrix Spike Duplicate          | Total/NA  | Water  | 537.1  | 163978     |

### Prep Batch: 164712

| Lab Sample ID        | Client Sample ID                | Prep Type | Matrix | Method | Prep Batch |
|----------------------|---------------------------------|-----------|--------|--------|------------|
| 380-161197-1         | HALAWA SHAFT VIEWING POOL       | Total/NA  | Water  | 533    |            |
| 380-161197-2         | HALAWA SHAFT VIEWING POOL Blank | Total/NA  | Water  | 533    |            |
| MBL 380-164712/20-A  | Method Blank                    | Total/NA  | Water  | 533    |            |
| LCS 380-164712/22-A  | Lab Control Sample              | Total/NA  | Water  | 533    |            |
| MRL 380-164712/21-A  | Lab Control Sample              | Total/NA  | Water  | 533    |            |
| 380-161193-E-1-A MS  | Matrix Spike                    | Total/NA  | Water  | 533    |            |
| 380-161193-F-1-A MSD | Matrix Spike Duplicate          | Total/NA  | Water  | 533    |            |

### Analysis Batch: 164830

| Lab Sample ID        | Client Sample ID                | Prep Type | Matrix | Method | Prep Batch |
|----------------------|---------------------------------|-----------|--------|--------|------------|
| 380-161197-1         | HALAWA SHAFT VIEWING POOL       | Total/NA  | Water  | 533    | 164712     |
| 380-161197-2         | HALAWA SHAFT VIEWING POOL Blank | Total/NA  | Water  | 533    | 164712     |
| MBL 380-164712/20-A  | Method Blank                    | Total/NA  | Water  | 533    | 164712     |
| LCS 380-164712/22-A  | Lab Control Sample              | Total/NA  | Water  | 533    | 164712     |
| MRL 380-164712/21-A  | Lab Control Sample              | Total/NA  | Water  | 533    | 164712     |
| 380-161193-E-1-A MS  | Matrix Spike                    | Total/NA  | Water  | 533    | 164712     |
| 380-161193-F-1-A MSD | Matrix Spike Duplicate          | Total/NA  | Water  | 533    | 164712     |

## Lab Chronicle

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-161197-1**

**Date Collected: 07/15/25 10:01**

**Matrix: Water**

**Date Received: 07/17/25 09:33**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab    | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|--------|----------------------|
| Total/NA  | Prep       | 533          |     |                 | 164712       | N8NE    | EA POM | 07/23/25 17:13       |
| Total/NA  | Analysis   | 533          |     | 1               | 164830       | M7ML    | EA POM | 07/24/25 14:02       |
| Total/NA  | Prep       | 537.1 DW     |     |                 | 163978       | G9MN    | EA POM | 07/21/25 03:00       |
| Total/NA  | Analysis   | 537.1        |     | 1               | 164124       | SZ9R    | EA POM | 07/21/25 19:10       |

**Client Sample ID: HALAWA SHAFT VIEWING POOL Blank**

**Lab Sample ID: 380-161197-2**

**Date Collected: 07/15/25 10:01**

**Matrix: Water**

**Date Received: 07/17/25 09:33**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab    | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|--------|----------------------|
| Total/NA  | Prep       | 533          |     |                 | 164712       | N8NE    | EA POM | 07/23/25 17:13       |
| Total/NA  | Analysis   | 533          |     | 1               | 164830       | M7ML    | EA POM | 07/24/25 14:12       |
| Total/NA  | Prep       | 537.1 DW     |     |                 | 163978       | G9MN    | EA POM | 07/21/25 03:00       |
| Total/NA  | Analysis   | 537.1        |     | 1               | 164124       | SZ9R    | EA POM | 07/21/25 19:19       |

### 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: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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## Method Summary

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

Job ID: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

| 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: 380-161197-1  
SDG: PFAS - Halawa Shaft Viewing Pool

| Lab Sample ID | Client Sample ID                | Matrix | Collected      | Received       |
|---------------|---------------------------------|--------|----------------|----------------|
| 380-161197-1  | HALAWA SHAFT VIEWING POOL       | Water  | 07/15/25 10:01 | 07/17/25 09:33 |
| 380-161197-2  | HALAWA SHAFT VIEWING POOL Blank | Water  | 07/15/25 10:01 | 07/17/25 09:33 |

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



Environment Testing  
America

|                                                                                                                                                                                                                                                                                                                               |  |                                                     |  |                                                                                                                                                                                                                                                                                                   |  |                                             |  |                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Client Information<br>Client Contact: kirk iwamoto<br>Company: City & County of Honolulu<br>Address: 630 South Beretania Street; Chemistry Lab<br>City: Honolulu<br>State, Zip: HI, 96843<br>Phone: 808-748-5840 (tel)<br>Email: kiwamoto@hbws.org<br>Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site |  | Sampler: bailey<br>Phone: +1 808 748 5840<br>PWSID: |  | Lab PM: Arada, Rachelle<br>E-Mail: Rachelle.Arada@et.euronisus.com                                                                                                                                                                                                                                |  | Carrier Tracking No(s):<br>State of Origin: |  | SOC No: 380-27941-2757 2<br>Page: Page 2 of 2<br>Job #:                                                                                                                                                                                                                                                                                                           |  |  |  |
| Due Date Requested:<br>TAT Requested (days): RUSH<br>Compliance Project: Δ No<br>PO #: C20525101 exp 05312023<br>WO #:                                                                                                                                                                                                        |  |                                                     |  | Analysis Requested                                                                                                                                                                                                                                                                                |  |                                             |  | Preservation Codes:<br>A - HCL M - Hexane<br>B - NaOH N - None<br>C - Zn Acetate O - AsNaO2<br>D - Nitric Acid P - Na2O4S<br>E - NaHSO4 Q - Na2SO3<br>F - MeOH R - Na2S2O3<br>G - Amchlor S - H2SO4<br>H - Ascorbic Acid T - TSP Dodecahydrate<br>I - Ice U - Acetone<br>J - DI Water V - NCA<br>K - EDTA W - pH 4-5<br>L - EDA Y - Trizma<br>Z - other (specify) |  |  |  |
| Sample Identification<br>Sample Date<br>Sample Time<br>Sample Type (C=comp, G=grab)<br>Matrix (W=water, S=solid, O=organic)<br>BT=Trislu, AnAlly                                                                                                                                                                              |  |                                                     |  | Field Filtered Sample (Yes or No)<br>Perform MMSD (Yes or No)<br>SUBCONTRACT - 625 PAH Physia LL (EAL) + TICs<br>8015B_GRO_LL - (MOD) GRO<br>8015B_DRO_LL_CS - HNL Ranges: C10-C24C24-C36/C8-C18<br>525.2_PREC - (MOD) 526plus PLUS TICs<br>537.1_DW_PREC - 537.1 Full List<br>533 - All Analytes |  |                                             |  | Total Number of Containers<br>Special Instructions/Note:                                                                                                                                                                                                                                                                                                          |  |  |  |
| Halawa Shaft Viewing Pool<br>Halawa Shaft Viewing Pool Blank                                                                                                                                                                                                                                                                  |  |                                                     |  | 15-Jul-2025<br>1001<br>G<br>Water                                                                                                                                                                                                                                                                 |  |                                             |  | 3<br>3<br>1<br>1                                                                                                                                                                                                                                                                                                                                                  |  |  |  |
| Possible Hazard Identification<br><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                                                                      |  |                                                     |  | Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)<br><input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months                                                                       |  |                                             |  | Deliverable Requested: I, II, III, IV, Other (specify)                                                                                                                                                                                                                                                                                                            |  |  |  |
| Empty Kit Relinquished by<br>Relinquished by: [Redacted]<br>Relinquished by:<br>Relinquished by:                                                                                                                                                                                                                              |  |                                                     |  | Date: 7-16-2025 1240<br>Company: HBWS<br>Company:<br>Company:                                                                                                                                                                                                                                     |  |                                             |  | Method of Shipment: FedEx 9428 3616 2381<br>Received by: [Signature]<br>Received by:<br>Received by:                                                                                                                                                                                                                                                              |  |  |  |
| Custody Seals Intact: Δ Yes Δ No<br>Custody Seal No.:                                                                                                                                                                                                                                                                         |  |                                                     |  | Cooler Temperature(s) °C and Other Remarks: 63(A) 4.1 ± 0.10 = 4.1 gel - frozen                                                                                                                                                                                                                   |  |                                             |  |                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |

Ver: 01/16/2019

## Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-161197-1

SDG Number: PFAS - Halawa Shaft Viewing Pool

Login Number: 161197

List Number: 1

Creator: Ngo, Theodore

List Source: Eurofins Eaton Analytical Pomona

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