

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 8/18/2025 5:27:06 PM

## JOB DESCRIPTION

RED-HILL  
PFAS: Halawa Shaft Viewing Pool

## JOB NUMBER

380-164823-1

# 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



Authorized for release by  
Maria Lopez, Project Manager  
[Maria.Lopez@et.eurofinsus.com](mailto:Maria.Lopez@et.eurofinsus.com)  
(626)386-1100

Generated  
8/18/2025 5:27:06 PM



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Definitions/Glossary . . . . .	4
Case Narrative . . . . .	5
Detection Summary . . . . .	6
Client Sample Results . . . . .	7
Action Limit Summary . . . . .	9
Surrogate Summary . . . . .	10
Isotope Dilution Summary . . . . .	11
QC Sample Results . . . . .	12
QC Association Summary . . . . .	17
Lab Chronicle . . . . .	18
Certification Summary . . . . .	19
Method Summary . . . . .	20
Sample Summary . . . . .	21
Chain of Custody . . . . .	22
Receipt Checklists . . . . .	24

# Definitions/Glossary

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

Job ID: 380-164823-1  
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: 380-164823-1

**Job ID: 380-164823-1**

**Eurofins Eaton Analytical Pomona**

## **Job Narrative 380-164823-1**

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

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

### **Receipt**

The samples were received on 8/7/2025 9:34 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C.

### **PFAS**

Method 533: The Isotope Dilution Analyte (IDA) 13C3 HFPO-DA, 13C6 PFDA, 13C8 PFOA, 13C9 PFNA and 13C7 PFUnA recovery associated with the following samples is below the method control limit: Halawa Shaft Viewing Pool Blank (380-164823-2). IDA recovery bias low for several analytes. Insufficient volume for re-extraction, affected analytes qualified. Result not acceptable per method. Any detection of affected analytes in native sample is also not acceptable per method. PFAS results by 533 for Halawa Shaft viewing pool collected on 08/05/25 are not acceptable for compliance reporting due to QC failures of Isotope Dilution Analytes (IDA) not meeting the method Limits. The sample is collected weekly thus follow up sample was collected on 08/12/25 under Job # 380-166328-1. Analysis by EPA 533 is currently in progress. (XWB4)

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

# Detection Summary

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

## Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-164823-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.8		2.0	ng/L	1		537.1	Total/NA

## Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-164823-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona



# Client Sample Results

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: 380-164823-1**

Date Collected: 08/05/25 09:40

Matrix: Water

Date Received: 08/07/25 09:34

**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		08/09/25 05:56	08/10/25 16:16	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.4</b>		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>3.8</b>		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130	08/09/25 05:56	08/10/25 16:16	1
13C2 PFHxA	110		70 - 130	08/09/25 05:56	08/10/25 16:16	1
13C2 PFDA	113		70 - 130	08/09/25 05:56	08/10/25 16:16	1
13C3-GenX	111		70 - 130	08/09/25 05:56	08/10/25 16:16	1

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

**Lab Sample ID: 380-164823-2**

Date Collected: 08/05/25 09:40

Matrix: Water

Date Received: 08/07/25 09:34

**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		08/09/25 05:56	08/10/25 16:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: 380-164823-2**

Date Collected: 08/05/25 09:40

Matrix: Water

Date Received: 08/07/25 09:34

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/09/25 05:56	08/10/25 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	90		70 - 130	08/09/25 05:56	08/10/25 16:25	1
13C2 PFHxA	102		70 - 130	08/09/25 05:56	08/10/25 16:25	1
13C2 PFDA	107		70 - 130	08/09/25 05:56	08/10/25 16:25	1
13C3-GenX	96		70 - 130	08/09/25 05:56	08/10/25 16:25	1



# Action Limit Summary

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: 380-164823-1**

## 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	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)	3.8		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: 380-164823-2**

## 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	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: 380-164823-1  
 SDG: PFAS: Halawa Shaft Viewing Pool

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

**Matrix: Water**

**Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-164823-1	Halawa Shaft Viewing Pool	99	110	113	111
380-164823-2	Halawa Shaft Viewing Pool Blank	90	102	107	96
380-165068-B-1-A MS	Matrix Spike	100	106	109	103
380-165068-B-1-B MSD	Matrix Spike Duplicate	96	110	111	107
LCS 380-167655/24-A	Lab Control Sample	98	107	107	104
MBL 380-167655/22-A	Method Blank	98	109	107	108
MRL 380-167655/23-A	Lab Control Sample	96	106	108	105

**Surrogate Legend**

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



# Isotope Dilution Summary

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

Job ID: 380-164823-1  
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 (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-164823-1	Halawa Shaft Viewing Pool	75	66	78	76	73	67	73	85
380-164823-2	Halawa Shaft Viewing Pool Blank	45 *5-	45 *5-	52	50	45 *5-	45 *5-	47 *5-	52
380-164831-E-1-A MS	Matrix Spike	104	116	112	116	108	117	121	122
380-164831-F-1-A MSD	Matrix Spike Duplicate	119	119	120	122	121	119	124	128
LCS 380-167452/22-A	Lab Control Sample	102	119	120	118	112	118	120	123
MBL 380-167452/20-A	Method Blank	83	108	109	111	108	111	108	112
MRL 380-167452/21-A	Lab Control Sample	90	117	112	112	116	114	115	119

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-164823-1	Halawa Shaft Viewing Pool	86	84	120	118	110	134	129	122
380-164823-2	Halawa Shaft Viewing Pool Blank	59	53	113	114	111	113	115	122
380-164831-E-1-A MS	Matrix Spike	104	109	117	118	115	117	117	118
380-164831-F-1-A MSD	Matrix Spike Duplicate	113	111	119	119	115	116	117	119
LCS 380-167452/22-A	Lab Control Sample	108	105	117	119	114	116	115	116
MBL 380-167452/20-A	Method Blank	106	104	113	115	107	119	116	113
MRL 380-167452/21-A	Lab Control Sample	111	113	127	125	119	129	120	123

#### Surrogate Legend

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

# QC Sample Results

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MBL 380-167655/22-A**  
**Matrix: Water**  
**Analysis Batch: 167701**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 167655**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/09/25 05:56	08/10/25 14:57	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MBL Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
d5-NEtFOSAA	98		70 - 130			08/09/25 05:56	08/10/25 14:57	1
13C2 PFHxA	109		70 - 130			08/09/25 05:56	08/10/25 14:57	1
13C2 PFDA	107		70 - 130			08/09/25 05:56	08/10/25 14:57	1
13C3-GenX	108		70 - 130			08/09/25 05:56	08/10/25 14:57	1

**Lab Sample ID: LCS 380-167655/24-A**  
**Matrix: Water**  
**Analysis Batch: 167701**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 167655**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	23.2		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	26.7		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	24.5		ng/L		98	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	25.5		ng/L		102	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	24.8		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	24.3		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	23.5		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	25.9		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	25.0		ng/L		100	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: LCS 380-167655/24-A**  
**Matrix: Water**  
**Analysis Batch: 167701**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 167655**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	25.1	26.5		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	26.3		ng/L		105	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	25.2		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	25.1	25.0		ng/L		100	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	20.6		ng/L		82	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.1	23.3		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	24.8		ng/L		99	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	22.4		ng/L		89	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	25.0		ng/L		100	70 - 130
		<b>LCS</b>	<b>LCS</b>				
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>
d5-NEtFOSAA		98					70 - 130
13C2 PFHxA		107					70 - 130
13C2 PFDA		107					70 - 130
13C3-GenX		104					70 - 130

**Lab Sample ID: MRL 380-167655/23-A**  
**Matrix: Water**  
**Analysis Batch: 167701**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 167655**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.48	J	ng/L		124	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.21	J	ng/L		110	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.17	J	ng/L		109	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.32	J	ng/L		116	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.13	J	ng/L		107	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.49	J	ng/L		124	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.47	J	ng/L		123	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.35	J	ng/L		118	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.85	J	ng/L		92	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MRL 380-167655/23-A**  
**Matrix: Water**  
**Analysis Batch: 167701**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 167655**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.06	J	ng/L		103	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.26	J	ng/L		113	50 - 150
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.95	J	ng/L		98	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.30	J	ng/L		115	50 - 150
<b>Surrogate</b>							
	%Recovery	MRL	MRL Qualifier	Limits			
d5-NEtFOSAA	96			70 - 130			
13C2 PFHxA	106			70 - 130			
13C2 PFDA	108			70 - 130			
13C3-GenX	105			70 - 130			

**Lab Sample ID: 380-165068-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 167701**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 167655**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	24.4		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	26.9		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	24.7		ng/L		98	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	25.7		ng/L		102	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	24.4		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	24.7		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	24.5		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	26.5		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	25.6		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	27.3		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	26.2		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	25.6		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	25.2		ng/L		100	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	21.0		ng/L		84	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.1	23.8		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	25.1		ng/L		100	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	22.3		ng/L		89	70 - 130

# QC Sample Results

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: 380-165068-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 167701**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 167655**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	25.5		ng/L		102	70 - 130
<b>MS MS</b>									
Surrogate	%Recovery	Qualifier	Limits						
d5-NEtFOSAA	100		70 - 130						
13C2 PFHxA	106		70 - 130						
13C2 PFDA	109		70 - 130						
13C3-GenX	103		70 - 130						

**Lab Sample ID: 380-165068-B-1-B MSD**  
**Matrix: Water**  
**Analysis Batch: 167701**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 167655**

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		25.2	24.9		ng/L		99	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	26.8		ng/L		106	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	24.4		ng/L		97	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	25.4		ng/L		101	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	23.6		ng/L		94	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	25.2		ng/L		100	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	24.0		ng/L		96	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		25.2	27.0		ng/L		107	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		25.2	25.4		ng/L		101	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	28.0		ng/L		111	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	27.1		ng/L		108	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	26.1		ng/L		104	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		25.2	25.3		ng/L		101	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	20.7		ng/L		82	70 - 130	2	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.2	23.4		ng/L		93	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	25.5		ng/L		101	70 - 130	2	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	22.3		ng/L		89	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	26.3		ng/L		104	70 - 130	3	30
<b>MSD MSD</b>											
Surrogate	%Recovery	Qualifier	Limits								
d5-NEtFOSAA	96		70 - 130								
13C2 PFHxA	110		70 - 130								
13C2 PFDA	111		70 - 130								

# QC Sample Results

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-165068-B-1-B MSD  
Matrix: Water  
Analysis Batch: 167701

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 167655

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C3-GenX	107		70 - 130

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17



# QC Association Summary

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

Job ID: 380-164823-1  
 SDG: PFAS: Halawa Shaft Viewing Pool

## LCMS

### Prep Batch: 167655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-164823-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
380-164823-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	537.1 DW	
MBL 380-167655/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-167655/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-167655/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-165068-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-165068-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Analysis Batch: 167701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-164823-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	167655
380-164823-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	537.1	167655
MBL 380-167655/22-A	Method Blank	Total/NA	Water	537.1	167655
LCS 380-167655/24-A	Lab Control Sample	Total/NA	Water	537.1	167655
MRL 380-167655/23-A	Lab Control Sample	Total/NA	Water	537.1	167655
380-165068-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	167655
380-165068-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	167655



# Lab Chronicle

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

## Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-164823-1

Date Collected: 08/05/25 09:40

Matrix: Water

Date Received: 08/07/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			167655	E9PK	EA POM	08/09/25 05:56
Total/NA	Analysis	537.1		1	167701	SZ9R	EA POM	08/10/25 16:16

## Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-164823-2

Date Collected: 08/05/25 09:40

Matrix: Water

Date Received: 08/07/25 09:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			167655	E9PK	EA POM	08/09/25 05:56
Total/NA	Analysis	537.1		1	167701	SZ9R	EA POM	08/10/25 16:25

### 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: 380-164823-1  
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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

# Method Summary

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

Job ID: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

Method	Method Description	Protocol	Laboratory
537.1	Perfluorinated Alkyl Acids (LC/MS)	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: 380-164823-1  
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-164823-1	Halawa Shaft Viewing Pool	Water	08/05/25 09:40	08/07/25 09:34	Hawaii
380-164823-2	Halawa Shaft Viewing Pool Blank	Water	08/05/25 09:40	08/07/25 09:34	Hawaii

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17





## Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-164823-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

**Login Number: 164823**

**List Number: 1**

**Creator: Hernandez, Orlando**

**List Source: Eurofins Eaton Analytical Pomona**

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