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# ANALYTICAL REPORT

## PREPARED FOR

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

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## JOB DESCRIPTION

RED-HILL  
RUSH Weekly Red Hill

## JOB NUMBER

380-72799-1

# 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: 380-72799-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
^3-	Reporting Limit Check Standard is outside acceptance limits, low biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS Semi VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

### GC Semi VOA

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.
S1+	Surrogate recovery exceeds control limits, high biased.

### 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: 380-72799-1

**Job ID: 380-72799-1**

**Eurofins Eaton Analytical Pomona**

## Job Narrative 380-72799-1

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 11/29/2023 9:46 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0°C and 2.0°C

### Subcontract Work

Method 625 PAH Physis LL (EAL) + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

### GC/MS Semi VOA

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

### Gasoline Range Organics

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

### GC Semi VOA

Method 8015B\_DRO\_LL\_CS: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-388616. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8015B\_DRO\_LL\_CS

Method 8015B\_DRO\_LL\_CS: A portion of the following samples were used for analysis, rather than testing the entire sample amount in the original container, due to the sample containers not being the appropriate size: MOANALUA WELLS (380-72799-1), AIEA GULCH WELLS PUMP2 (380-72799-2), AIEA WELLS PUMPS 1&2 (260) P2 (380-72799-3) and HALAWA WELLS UNITS 1&2 P1 (380-72799-4). As such, the required solvent rinse of the original container could not be performed.

Method 8015B\_DRO\_LL\_CS

Method 8015B\_DAI: The surrogate recovery for the blank associated with analytical batch 570-390388 was outside the upper control limits.

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

### PFAS

EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results. HALAWA WELLS UNITS 1&2 P1 (380-72799-4)

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: 380-72799-1

**Client Sample ID: MOANALUA WELLS**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-1**

No Detections.

**Client Sample ID: AIEA GULCH WELLS PUMP2**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-2**

No Detections.

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-3**

No Detections.

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-4**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.2		2.0	ng/L	1		537.1	Total/NA

**Client Sample ID: TB MOANALUA WELLS**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-5**

No Detections.

**Client Sample ID: TB AIEA GULCH WELLS PUMP2**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-6**

No Detections.

**Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-7**

No Detections.

**Client Sample ID: TB HALAWA WELLS UNITS 1&2 P1**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-8**

No Detections.

**Client Sample ID: FB MOANALUA WELLS**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-9**

No Detections.

**Client Sample ID: FB AIEA GULCH WELLS PUMP2**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-10**

No Detections.

**Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-11**

No Detections.

This Detection Summary does not include radiochemical test results.

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# Detection Summary

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

Job ID: 380-72799-1

**Client Sample ID: FB HALAWA WELLS UNITS 1&2 P1**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-72799-12**

No Detections.

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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: 380-72799-1

**Client Sample ID: MOANALUA WELLS**

**Lab Sample ID: 380-72799-1**

Date Collected: 11/27/23 10:28

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

**Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
2,4'-DDD	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
2,4'-DDE	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
2,4'-DDT	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
2,4-Dinitrotoluene	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
2,6-Dinitrotoluene	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
2-Methylnaphthalene	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
4,4'-DDD	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
4,4'-DDE	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
4,4'-DDT	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Acenaphthene	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Acenaphthylene	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Acetochlor	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Alachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
alpha-BHC	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
alpha-Chlordane	<0.050	^3+	0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Anthracene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:05	1
Atrazine	<0.050	^3-	0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Benz(a)anthracene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:05	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:05	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:05	1
beta-BHC	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		11/30/23 09:45	12/01/23 15:05	1
Bromacil	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Butachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Butylbenzylphthalate	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 15:05	1
Chlorobenzilate	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Chloroneb	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Chlorothalonil (Draconil, Bravo)	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Chlorpyrifos	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Chrysene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:05	1
delta-BHC	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		11/30/23 09:45	12/01/23 15:05	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Dieldrin	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 15:05	1
Diethylphthalate	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 15:05	1
Dimethylphthalate	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 15:05	1
Di-n-butyl phthalate	<1.0		1.0	ug/L		11/30/23 09:45	12/01/23 15:05	1
Di-n-octyl phthalate	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Endosulfan I (Alpha)	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Endosulfan II (Beta)	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Endosulfan sulfate	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Endrin	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Endrin aldehyde	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
EPTC	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Fluoranthene	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1

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# Client Sample Results

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

Job ID: 380-72799-1

## Client Sample ID: MOANALUA WELLS

## Lab Sample ID: 380-72799-1

Date Collected: 11/27/23 10:28

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

### Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
gamma-Chlordane	<0.050	^3+	0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Heptachlor	<0.040		0.040	ug/L		11/30/23 09:45	12/01/23 15:05	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Hexachlorobenzene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Isophorone	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 15:05	1
Lindane	<0.040		0.040	ug/L		11/30/23 09:45	12/01/23 15:05	1
Malathion	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Methoxychlor	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Metolachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Molinate	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Naphthalene	<0.30		0.30	ug/L		11/30/23 09:45	12/01/23 15:05	1
Parathion	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Pendimethalin (Penoxaline)	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Phenanthrene	<0.040		0.040	ug/L		11/30/23 09:45	12/01/23 15:05	1
Propachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Pyrene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Simazine	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Terbacil	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Terbutylazine	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1
Thiobencarb	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 15:05	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 15:05	1
trans-Nonachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:05	1
Trifluralin	<0.10		0.10	ug/L		11/30/23 09:45	12/01/23 15:05	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	11/30/23 09:45	12/01/23 15:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	11/30/23 09:45	12/01/23 15:05	1
Perylene-d12	85		70 - 130	11/30/23 09:45	12/01/23 15:05	1
Triphenylphosphate	102		70 - 130	11/30/23 09:45	12/01/23 15:05	1

### Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			12/06/23 15:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		38 - 134		12/06/23 15:16	1

### Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		12/01/23 14:27	12/19/23 14:37	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		12/01/23 14:27	12/19/23 14:37	1
C8-C18	<25		25	ug/L		12/01/23 14:27	12/19/23 14:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	84		60 - 130	12/01/23 14:27	12/19/23 14:37	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-72799-1

## Client Sample ID: MOANALUA WELLS

## Lab Sample ID: 380-72799-1

Date Collected: 11/27/23 10:28

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

### Method: SW846 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10	mg/L			12/07/23 20:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	105		54 - 120				12/07/23 20:39	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:36	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	98		50 - 200			12/05/23 12:34	12/07/23 08:36	1
13C6 PFDA	90		50 - 200			12/05/23 12:34	12/07/23 08:36	1
13C5 PFHxA	95		50 - 200			12/05/23 12:34	12/07/23 08:36	1
13C4 PFHpA	87		50 - 200			12/05/23 12:34	12/07/23 08:36	1
13C8 PFOA	94		50 - 200			12/05/23 12:34	12/07/23 08:36	1
13C9 PFNA	93		50 - 200			12/05/23 12:34	12/07/23 08:36	1
13C7 PFUnA	86		50 - 200			12/05/23 12:34	12/07/23 08:36	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-72799-1

## Client Sample ID: MOANALUA WELLS

Date Collected: 11/27/23 10:28

Date Received: 11/29/23 09:46

## Lab Sample ID: 380-72799-1

Matrix: Drinking Water

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	90		50 - 200	12/05/23 12:34	12/07/23 08:36	1
13C4 PFBA	97		50 - 200	12/05/23 12:34	12/07/23 08:36	1
13C5 PFPeA	96		50 - 200	12/05/23 12:34	12/07/23 08:36	1
13C3 PFBS	103		50 - 200	12/05/23 12:34	12/07/23 08:36	1
13C3 PFHxS	101		50 - 200	12/05/23 12:34	12/07/23 08:36	1
13C8 PFOS	98		50 - 200	12/05/23 12:34	12/07/23 08:36	1
13C2-4:2-FTS	98		50 - 200	12/05/23 12:34	12/07/23 08:36	1
13C2-6:2-FTS	95		50 - 200	12/05/23 12:34	12/07/23 08:36	1
13C2-8:2-FTS	93		50 - 200	12/05/23 12:34	12/07/23 08:36	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		12/05/23 05:42	12/05/23 18:24	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	94		70 - 130	12/05/23 05:42	12/05/23 18:24	1
13C2 PFHxA	97		70 - 130	12/05/23 05:42	12/05/23 18:24	1
13C2 PFDA	94		70 - 130	12/05/23 05:42	12/05/23 18:24	1
13C3-GenX	98		70 - 130	12/05/23 05:42	12/05/23 18:24	1

## Client Sample ID: AIEA GULCH WELLS PUMP2

Date Collected: 11/27/23 11:33

Date Received: 11/29/23 09:46

## Lab Sample ID: 380-72799-2

Matrix: Drinking Water

PWSID Number: HI0000331

### Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
2,4'-DDD	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
2,4'-DDE	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: AIEA GULCH WELLS PUMP2**

**Lab Sample ID: 380-72799-2**

Date Collected: 11/27/23 11:33

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

**Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDT	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
2-Methylnaphthalene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
4,4'-DDD	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
4,4'-DDE	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
4,4'-DDT	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Acenaphthene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Acenaphthylene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Acetochlor	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Alachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
alpha-BHC	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
alpha-Chlordane	<0.050	^3+	0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Anthracene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:24	1
Atrazine	<0.050	^3-	0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Benz(a)anthracene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:24	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:24	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:24	1
beta-BHC	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		11/30/23 09:45	12/01/23 15:24	1
Bromacil	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Butachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Butylbenzylphthalate	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 15:24	1
Chlorobenzilate	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Chloroneb	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Chlorpyrifos	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Chrysene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 15:24	1
delta-BHC	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		11/30/23 09:45	12/01/23 15:24	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Dieldrin	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 15:24	1
Diethylphthalate	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 15:24	1
Dimethylphthalate	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 15:24	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		11/30/23 09:45	12/01/23 15:24	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Endosulfan sulfate	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Endrin	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Endrin aldehyde	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
EPTC	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Fluoranthene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Fluorene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
gamma-Chlordane	<0.050	^3+	0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Heptachlor	<0.040		0.040	ug/L		11/30/23 09:45	12/01/23 15:24	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: AIEA GULCH WELLS PUMP2**

**Lab Sample ID: 380-72799-2**

Date Collected: 11/27/23 11:33

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

## Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Hexachlorobenzene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Isophorone	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 15:24	1
Lindane	<0.040		0.040	ug/L		11/30/23 09:45	12/01/23 15:24	1
Malathion	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Methoxychlor	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Metolachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Molinate	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Naphthalene	<0.30		0.30	ug/L		11/30/23 09:45	12/01/23 15:24	1
Parathion	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Phenanthrene	<0.040		0.040	ug/L		11/30/23 09:45	12/01/23 15:24	1
Propachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Pyrene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Simazine	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Terbacil	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Terbutylazine	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1
Thiobencarb	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 15:24	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 15:24	1
trans-Nonachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 15:24	1
Trifluralin	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 15:24	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	11/30/23 09:45	12/01/23 15:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	96		70 - 130	11/30/23 09:45	12/01/23 15:24	1
Perylene-d12	84		70 - 130	11/30/23 09:45	12/01/23 15:24	1
Triphenylphosphate	92		70 - 130	11/30/23 09:45	12/01/23 15:24	1

## Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			12/06/23 15:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		38 - 134		12/06/23 15:42	1

## Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		12/01/23 14:27	12/19/23 14:58	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		12/01/23 14:27	12/19/23 14:58	1
C8-C18	<25		25	ug/L		12/01/23 14:27	12/19/23 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	86		60 - 130	12/01/23 14:27	12/19/23 14:58	1

## Method: SW846 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10	mg/L			12/07/23 21:01	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: AIEA GULCH WELLS PUMP2**

**Lab Sample ID: 380-72799-2**

Date Collected: 11/27/23 11:33

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	108		54 - 120		12/07/23 21:01	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 08:57	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C6 PFDA	89		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C5 PFHxA	92		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C4 PFHpA	89		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C8 PFOA	91		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C9 PFNA	91		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C7 PFUnA	85		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C2 PFDoA	88		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C4 PFBA	92		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C5 PFPeA	90		50 - 200	12/05/23 12:34	12/07/23 08:57	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: AIEA GULCH WELLS PUMP2**

**Lab Sample ID: 380-72799-2**

Date Collected: 11/27/23 11:33

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	102		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C3 PFHxS	104		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C8 PFOS	98		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C2-4:2-FTS	99		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C2-6:2-FTS	96		50 - 200	12/05/23 12:34	12/07/23 08:57	1
13C2-8:2-FTS	100		50 - 200	12/05/23 12:34	12/07/23 08:57	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		12/05/23 05:42	12/05/23 18:34	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	95		70 - 130	12/05/23 05:42	12/05/23 18:34	1
13C2 PFHxA	100		70 - 130	12/05/23 05:42	12/05/23 18:34	1
13C2 PFDA	95		70 - 130	12/05/23 05:42	12/05/23 18:34	1
13C3-GenX	103		70 - 130	12/05/23 05:42	12/05/23 18:34	1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2**

**Lab Sample ID: 380-72799-3**

Date Collected: 11/27/23 11:57

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

**Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
2,4'-DDD	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
2,4'-DDE	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
2,4'-DDT	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2**

**Lab Sample ID: 380-72799-3**

Date Collected: 11/27/23 11:57

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

**Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
4,4'-DDD	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
4,4'-DDE	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
4,4'-DDT	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Acenaphthene	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Acenaphthylene	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Acetochlor	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Alachlor	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
alpha-BHC	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
alpha-Chlordane	<0.049	^3+	0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Anthracene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 16:44	1
Atrazine	<0.049	^3-	0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Benz(a)anthracene	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 16:44	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 16:44	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 16:44	1
beta-BHC	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		11/30/23 09:45	12/01/23 16:44	1
Bromacil	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Butachlor	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Butylbenzylphthalate	<0.49		0.49	ug/L		11/30/23 09:45	12/01/23 16:44	1
Chlorobenzilate	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Chloroneb	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Chlorpyrifos	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Chrysene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 16:44	1
delta-BHC	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		11/30/23 09:45	12/01/23 16:44	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Dieldrin	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 16:44	1
Diethylphthalate	<0.49		0.49	ug/L		11/30/23 09:45	12/01/23 16:44	1
Dimethylphthalate	<0.49		0.49	ug/L		11/30/23 09:45	12/01/23 16:44	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		11/30/23 09:45	12/01/23 16:44	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Endosulfan sulfate	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Endrin	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Endrin aldehyde	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
EPTC	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Fluoranthene	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Fluorene	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
gamma-Chlordane	<0.049	^3+	0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Heptachlor	<0.039		0.039	ug/L		11/30/23 09:45	12/01/23 16:44	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Hexachlorobenzene	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2**

**Lab Sample ID: 380-72799-3**

Date Collected: 11/27/23 11:57

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

## Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Isophorone	<0.49		0.49	ug/L		11/30/23 09:45	12/01/23 16:44	1
Lindane	<0.039		0.039	ug/L		11/30/23 09:45	12/01/23 16:44	1
Malathion	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Methoxychlor	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Metolachlor	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Molinate	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Naphthalene	<0.30		0.30	ug/L		11/30/23 09:45	12/01/23 16:44	1
Parathion	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Phenanthrene	<0.039		0.039	ug/L		11/30/23 09:45	12/01/23 16:44	1
Propachlor	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Pyrene	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Simazine	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Terbacil	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Terbutylazine	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1
Thiobencarb	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 16:44	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 16:44	1
trans-Nonachlor	<0.049		0.049	ug/L		11/30/23 09:45	12/01/23 16:44	1
Trifluralin	<0.098		0.098	ug/L		11/30/23 09:45	12/01/23 16:44	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	11/30/23 09:45	12/01/23 16:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	97		70 - 130	11/30/23 09:45	12/01/23 16:44	1
Perylene-d12	93		70 - 130	11/30/23 09:45	12/01/23 16:44	1
Triphenylphosphate	103		70 - 130	11/30/23 09:45	12/01/23 16:44	1

## Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			12/06/23 14:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	70		38 - 134		12/06/23 14:50	1

## Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		12/01/23 14:27	12/19/23 15:18	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		12/01/23 14:27	12/19/23 15:18	1
C8-C18	<25		25	ug/L		12/01/23 14:27	12/19/23 15:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	95		60 - 130	12/01/23 14:27	12/19/23 15:18	1

## Method: SW846 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10	mg/L			12/07/23 21:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	109		54 - 120		12/07/23 21:23	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2**

**Lab Sample ID: 380-72799-3**

Date Collected: 11/27/23 11:57

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C6 PFDA	91		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C5 PFHxA	86		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C4 PFHpA	88		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C8 PFOA	90		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C9 PFNA	91		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C7 PFUnA	84		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C2 PFDoA	85		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C4 PFBA	90		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C5 PFPeA	87		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C3 PFBS	102		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C3 PFHxS	104		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C8 PFOS	97		50 - 200	12/05/23 12:34	12/07/23 09:08	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2**

**Lab Sample ID: 380-72799-3**

Date Collected: 11/27/23 11:57

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	100		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C2-6:2-FTS	99		50 - 200	12/05/23 12:34	12/07/23 09:08	1
13C2-8:2-FTS	99		50 - 200	12/05/23 12:34	12/07/23 09:08	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		12/05/23 05:42	12/05/23 18:54	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 18:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	101		70 - 130	12/05/23 05:42	12/05/23 18:54	1
13C2 PFHxA	97		70 - 130	12/05/23 05:42	12/05/23 18:54	1
13C2 PFDA	96		70 - 130	12/05/23 05:42	12/05/23 18:54	1
13C3-GenX	100		70 - 130	12/05/23 05:42	12/05/23 18:54	1

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-4**

Date Collected: 11/27/23 11:00

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

**Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
2,4'-DDD	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
2,4'-DDE	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
2,4'-DDT	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
2,4-Dinitrotoluene	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
2,6-Dinitrotoluene	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
2-Methylnaphthalene	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
4,4'-DDD	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
4,4'-DDE	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-4**

Date Collected: 11/27/23 11:00

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

**Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Acenaphthene	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Acenaphthylene	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Acetochlor	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Alachlor	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
alpha-BHC	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
alpha-Chlordane	<0.050	^3+	0.050	ug/L		11/30/23 11:10	12/03/23 13:41	1
Anthracene	<0.020		0.020	ug/L		11/30/23 11:10	12/01/23 17:04	1
Atrazine	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Benz(a)anthracene	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/30/23 11:10	12/01/23 17:04	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/30/23 11:10	12/01/23 17:04	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/30/23 11:10	12/01/23 17:04	1
beta-BHC	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		11/30/23 11:10	12/01/23 17:04	1
Bromacil	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Butachlor	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Butylbenzylphthalate	<0.50		0.50	ug/L		11/30/23 11:10	12/01/23 17:04	1
Chlorobenzilate	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Chloroneb	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Chlorothalonil (Draconil, Bravo)	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Chlorpyrifos	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Chrysene	<0.020		0.020	ug/L		11/30/23 11:10	12/01/23 17:04	1
delta-BHC	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		11/30/23 11:10	12/01/23 17:04	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Dieldrin	<0.20		0.20	ug/L		11/30/23 11:10	12/01/23 17:04	1
Diethylphthalate	<0.50		0.50	ug/L		11/30/23 11:10	12/01/23 17:04	1
Dimethylphthalate	<0.50		0.50	ug/L		11/30/23 11:10	12/01/23 17:04	1
Di-n-butyl phthalate	<1.0		1.0	ug/L		11/30/23 11:10	12/01/23 17:04	1
Di-n-octyl phthalate	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Endosulfan I (Alpha)	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Endosulfan II (Beta)	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Endosulfan sulfate	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Endrin	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Endrin aldehyde	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
EPTC	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Fluoranthene	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Fluorene	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
gamma-Chlordane	<0.050	^3+	0.050	ug/L		11/30/23 11:10	12/03/23 13:41	1
Heptachlor	<0.040		0.040	ug/L		11/30/23 11:10	12/01/23 17:04	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Hexachlorobenzene	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Isophorone	<0.50		0.50	ug/L		11/30/23 11:10	12/01/23 17:04	1
Lindane	<0.040		0.040	ug/L		11/30/23 11:10	12/01/23 17:04	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-4**

**Date Collected: 11/27/23 11:00**

**Matrix: Drinking Water**

**Date Received: 11/29/23 09:46**

**PWSID Number: HI0000331**

**Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Malathion	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Methoxychlor	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Metolachlor	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Molinate	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Naphthalene	<0.30		0.30	ug/L		11/30/23 11:10	12/01/23 17:04	1
Parathion	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Pendimethalin (Penoxaline)	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Phenanthrene	<0.040		0.040	ug/L		11/30/23 11:10	12/01/23 17:04	1
Propachlor	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Pyrene	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Simazine	<0.050		0.050	ug/L		11/30/23 11:10	12/01/23 17:04	1
Terbacil	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Terbutylazine	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1
Thiobencarb	<0.20		0.20	ug/L		11/30/23 11:10	12/01/23 17:04	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/30/23 11:10	12/01/23 17:04	1
trans-Nonachlor	<0.050		0.050	ug/L		11/30/23 11:10	12/03/23 13:41	1
Trifluralin	<0.10		0.10	ug/L		11/30/23 11:10	12/01/23 17:04	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	11/30/23 11:10	12/01/23 17:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	96		70 - 130	11/30/23 11:10	12/01/23 17:04	1
2-Nitro-m-xylene	99		70 - 130	11/30/23 11:10	12/03/23 13:41	1
Perylene-d12	88		70 - 130	11/30/23 11:10	12/01/23 17:04	1
Perylene-d12	97		70 - 130	11/30/23 11:10	12/03/23 13:41	1
Triphenylphosphate	99		70 - 130	11/30/23 11:10	12/01/23 17:04	1
Triphenylphosphate	107		70 - 130	11/30/23 11:10	12/03/23 13:41	1

**Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			12/06/23 16:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		38 - 134		12/06/23 16:09	1

**Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		12/01/23 14:27	12/19/23 15:39	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		12/01/23 14:27	12/19/23 15:39	1
C8-C18	<25		25	ug/L		12/01/23 14:27	12/19/23 15:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	100		60 - 130	12/01/23 14:27	12/19/23 15:39	1

**Method: SW846 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10	mg/L			12/07/23 21:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	111		54 - 120		12/07/23 21:45	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-4**

Date Collected: 11/27/23 11:00

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.4</b>		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.3</b>		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.0</b>		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
<b>Perfluoropentanoic acid (PFPeA)</b>	<b>2.3</b>		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C6 PFDA	91		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C5 PFHxA	92		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C4 PFHpA	92		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C8 PFOA	92		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C9 PFNA	94		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C7 PFUnA	87		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C2 PFDoA	91		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C4 PFBA	94		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C5 PFPeA	95		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C3 PFBS	101		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C3 PFHxS	103		50 - 200	12/05/23 12:34	12/07/23 09:17	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-4**

Date Collected: 11/27/23 11:00

Matrix: Drinking Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	97		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C2-4:2-FTS	104		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C2-6:2-FTS	103		50 - 200	12/05/23 12:34	12/07/23 09:17	1
13C2-8:2-FTS	98		50 - 200	12/05/23 12:34	12/07/23 09:17	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		12/05/23 05:42	12/05/23 19:06	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.2</b>		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	96		70 - 130	12/05/23 05:42	12/05/23 19:06	1
13C2 PFHxA	102		70 - 130	12/05/23 05:42	12/05/23 19:06	1
13C2 PFDA	100		70 - 130	12/05/23 05:42	12/05/23 19:06	1
13C3-GenX	103		70 - 130	12/05/23 05:42	12/05/23 19:06	1

**Client Sample ID: TB MOANALUA WELLS**

**Lab Sample ID: 380-72799-5**

Date Collected: 11/27/23 10:28

Matrix: Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

**Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			12/06/23 12:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		38 - 134		12/06/23 12:57	1

# Client Sample Results

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

Job ID: 380-72799-1

## Client Sample ID: TB AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-72799-6

Date Collected: 11/27/23 11:33

Matrix: Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

### Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			12/06/23 13:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		38 - 134				12/06/23 13:31	1

## Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-72799-7

Date Collected: 11/27/23 11:57

Matrix: Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

### Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			12/06/23 13:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		38 - 134				12/06/23 13:58	1

## Client Sample ID: TB HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-72799-8

Date Collected: 11/27/23 11:00

Matrix: Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

### Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			12/06/23 14:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		38 - 134				12/06/23 14:24	1

## Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-72799-9

Date Collected: 11/27/23 10:28

Matrix: Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: FB MOANALUA WELLS**

**Lab Sample ID: 380-72799-9**

Date Collected: 11/27/23 10:28

Matrix: Water

Date Received: 11/29/23 09:46

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:27	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C6 PFDA	86		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C5 PFHxA	94		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C4 PFHpA	92		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C8 PFOA	92		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C9 PFNA	91		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C7 PFUnA	83		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C2 PFDoA	83		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C4 PFBA	98		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C5 PFPeA	96		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C3 PFBS	98		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C3 PFHxS	102		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C8 PFOS	94		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C2-4:2-FTS	97		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C2-6:2-FTS	98		50 - 200	12/05/23 12:34	12/07/23 09:27	1
13C2-8:2-FTS	91		50 - 200	12/05/23 12:34	12/07/23 09:27	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		12/05/23 05:42	12/05/23 19:15	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: FB MOANALUA WELLS**

**Lab Sample ID: 380-72799-9**

**Date Collected: 11/27/23 10:28**

**Matrix: Water**

**Date Received: 11/29/23 09:46**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	97		70 - 130			12/05/23 05:42	12/05/23 19:15	1
13C2 PFHxA	107		70 - 130			12/05/23 05:42	12/05/23 19:15	1
13C2 PFDA	103		70 - 130			12/05/23 05:42	12/05/23 19:15	1
13C3-GenX	109		70 - 130			12/05/23 05:42	12/05/23 19:15	1

**Client Sample ID: FB AIEA GULCH WELLS PUMP2**

**Lab Sample ID: 380-72799-10**

**Date Collected: 11/27/23 11:33**

**Matrix: Water**

**Date Received: 11/29/23 09:46**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: FB AIEA GULCH WELLS PUMP2**

**Lab Sample ID: 380-72799-10**

**Date Collected: 11/27/23 11:33**

**Matrix: Water**

**Date Received: 11/29/23 09:46**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:37	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	105		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C6 PFDA	93		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C5 PFHxA	97		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C4 PFHpA	95		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C8 PFOA	94		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C9 PFNA	92		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C7 PFUnA	88		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C2 PFDoA	91		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C4 PFBA	101		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C5 PFPeA	96		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C3 PFBS	101		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C3 PFHxS	107		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C8 PFOS	96		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C2-4:2-FTS	103		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C2-6:2-FTS	97		50 - 200			12/05/23 12:34	12/07/23 09:37	1
13C2-8:2-FTS	94		50 - 200			12/05/23 12:34	12/07/23 09:37	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		12/05/23 05:42	12/05/23 19:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: FB AIEA GULCH WELLS PUMP2**

**Lab Sample ID: 380-72799-10**

**Date Collected: 11/27/23 11:33**

**Matrix: Water**

**Date Received: 11/29/23 09:46**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	97		70 - 130			12/05/23 05:42	12/05/23 19:25	1
13C2 PFHxA	101		70 - 130			12/05/23 05:42	12/05/23 19:25	1
13C2 PFDA	99		70 - 130			12/05/23 05:42	12/05/23 19:25	1
13C3-GenX	104		70 - 130			12/05/23 05:42	12/05/23 19:25	1

**Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2**

**Lab Sample ID: 380-72799-11**

**Date Collected: 11/27/23 11:57**

**Matrix: Water**

**Date Received: 11/29/23 09:46**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:46	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2**

**Lab Sample ID: 380-72799-11**

**Date Collected: 11/27/23 11:57**

**Matrix: Water**

**Date Received: 11/29/23 09:46**

**PWSID Number: HI0000331**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	107		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C6 PFDA	93		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C5 PFHxA	99		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C4 PFHpA	95		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C8 PFOA	96		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C9 PFNA	96		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C7 PFUnA	89		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C2 PFDoA	91		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C4 PFBA	98		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C5 PFPeA	93		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C3 PFBS	102		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C3 PFHxS	102		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C8 PFOS	95		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C2-4:2-FTS	97		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C2-6:2-FTS	96		50 - 200	12/05/23 12:34	12/07/23 09:46	1
13C2-8:2-FTS	91		50 - 200	12/05/23 12:34	12/07/23 09:46	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		12/05/23 05:42	12/05/23 19:35	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	91		70 - 130	12/05/23 05:42	12/05/23 19:35	1
13C2 PFHxA	98		70 - 130	12/05/23 05:42	12/05/23 19:35	1
13C2 PFDA	96		70 - 130	12/05/23 05:42	12/05/23 19:35	1
13C3-GenX	102		70 - 130	12/05/23 05:42	12/05/23 19:35	1

# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: FB HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-12**

**Date Collected: 11/27/23 11:00**

**Matrix: Water**

**Date Received: 11/29/23 09:46**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		12/05/23 12:34	12/07/23 09:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C6 PFDA	90		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C5 PFHxA	88		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C4 PFHpA	94		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C8 PFOA	92		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C9 PFNA	91		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C7 PFUnA	87		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C2 PFDoA	91		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C4 PFBA	95		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C5 PFPeA	92		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C3 PFBS	96		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C3 PFHxS	99		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C8 PFOS	94		50 - 200	12/05/23 12:34	12/07/23 09:56	1

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# Client Sample Results

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

Job ID: 380-72799-1

**Client Sample ID: FB HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-12**

**Date Collected: 11/27/23 11:00**

**Matrix: Water**

**Date Received: 11/29/23 09:46**

**PWSID Number: HI0000331**

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2-4:2-FTS	98		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C2-6:2-FTS	95		50 - 200	12/05/23 12:34	12/07/23 09:56	1
13C2-8:2-FTS	93		50 - 200	12/05/23 12:34	12/07/23 09:56	1

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/05/23 05:42	12/05/23 19:44	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
d5-NEtFOSAA	94		70 - 130	12/05/23 05:42	12/05/23 19:44	1
13C2 PFHxA	107		70 - 130	12/05/23 05:42	12/05/23 19:44	1
13C2 PFDA	104		70 - 130	12/05/23 05:42	12/05/23 19:44	1
13C3-GenX	107		70 - 130	12/05/23 05:42	12/05/23 19:44	1

# Action Limit Summary

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

Job ID: 380-72799-1

**Client Sample ID: MOANALUA WELLS**

**Lab Sample ID: 380-72799-1**

**PWSID Number: HI0000331**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.050		ug/L	2		0.050	525.2	Total/NA
Atrazine	<0.050	^3-	ug/L	3		0.050	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2		0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.60		ug/L	6		0.60	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.60		ug/L	400		0.60	525.2	Total/NA
Endrin	<0.10		ug/L	2		0.10	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4		0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.050		ug/L	0.2		0.050	525.2	Total/NA
Hexachlorobenzene	<0.050		ug/L	1		0.050	525.2	Total/NA
Hexachlorocyclopentadiene	<0.050		ug/L	50		0.050	525.2	Total/NA
Lindane	<0.040		ug/L	0.2		0.040	525.2	Total/NA
Methoxychlor	<0.10		ug/L	40		0.10	525.2	Total/NA
Simazine	<0.050		ug/L	4		0.050	525.2	Total/NA

**Client Sample ID: AIEA GULCH WELLS PUMP2**

**Lab Sample ID: 380-72799-2**

**PWSID Number: HI0000331**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.050		ug/L	2		0.050	525.2	Total/NA
Atrazine	<0.050	^3-	ug/L	3		0.050	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2		0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6		0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400		0.59	525.2	Total/NA
Endrin	<0.099		ug/L	2		0.099	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4		0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.050		ug/L	0.2		0.050	525.2	Total/NA
Hexachlorobenzene	<0.050		ug/L	1		0.050	525.2	Total/NA
Hexachlorocyclopentadiene	<0.050		ug/L	50		0.050	525.2	Total/NA
Lindane	<0.040		ug/L	0.2		0.040	525.2	Total/NA
Methoxychlor	<0.099		ug/L	40		0.099	525.2	Total/NA
Simazine	<0.050		ug/L	4		0.050	525.2	Total/NA

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-4**

**PWSID Number: HI0000331**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.050		ug/L	2		0.050	525.2	Total/NA
Atrazine	<0.050		ug/L	3		0.050	525.2	Total/NA

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# Action Limit Summary

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

Job ID: 380-72799-1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1 (Continued)

Lab Sample ID: 380-72799-4

PWSID Number: HI0000331

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.60		ug/L	6	0.60	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.60		ug/L	400	0.60	525.2	Total/NA
Endrin	<0.10		ug/L	2	0.10	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.050		ug/L	0.2	0.050	525.2	Total/NA
Hexachlorobenzene	<0.050		ug/L	1	0.050	525.2	Total/NA
Hexachlorocyclopentadiene	<0.050		ug/L	50	0.050	525.2	Total/NA
Lindane	<0.040		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	<0.10		ug/L	40	0.10	525.2	Total/NA
Simazine	<0.050		ug/L	4	0.050	525.2	Total/NA

# Surrogate Summary

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-72799-1	MOANALUA WELLS	98	85	102
380-72799-1 MS	MOANALUA WELLS	99	96	104
380-72799-2	AIEA GULCH WELLS PUMP2	96	84	92
380-72799-2 DU	AIEA GULCH WELLS PUMP2	99	82	104
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	97	93	103
380-72799-4	HALAWA WELLS UNITS 1&2 P1	96	88	99
380-72799-4	HALAWA WELLS UNITS 1&2 P1	99	97	107

**Surrogate Legend**  
 2NMX = 2-Nitro-m-xylene  
 PRY = Perylene-d12  
 TPP = Triphenylphosphate

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
LCS 380-65951/23-A	Lab Control Sample	95	95	104
MB 380-65951/21-A	Method Blank	95	71	112
MRL 380-65951/22-A	Lab Control Sample	97	83	102
MRL 380-65951/22-A	Lab Control Sample	97	98	112

**Surrogate Legend**  
 2NMX = 2-Nitro-m-xylene  
 PRY = Perylene-d12  
 TPP = Triphenylphosphate

## Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB1 (38-134)
380-72799-1	MOANALUA WELLS	83
380-72799-2	AIEA GULCH WELLS PUMP2	107
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	70
380-72799-3 MS	AIEA WELLS PUMPS 1&2 (260) P2	104
380-72799-3 MSD	AIEA WELLS PUMPS 1&2 (260) P2	105
380-72799-4	HALAWA WELLS UNITS 1&2 P1	93

**Surrogate Legend**  
 BFB = 4-Bromofluorobenzene (Surr)

# Surrogate Summary

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

Job ID: 380-72799-1

## Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1 (38-134)
380-72799-5	TB MOANALUA WELLS	83
380-72799-6	TB AIEA GULCH WELLS PUMP	94
380-72799-7	TB AIEA WELLS PUMPS 1&2 (260) P2	108
380-72799-8	TB HALAWA WELLS UNITS 1&2 P1	90
LCS 570-389820/4	Lab Control Sample	105
LCSD 570-389820/5	Lab Control Sample Dup	113
MB 570-389820/6	Method Blank	75
MRL 570-389820/3	Lab Control Sample	77

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

## Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Matrix: Drinking Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTCSN1 (60-130)
380-72799-1	MOANALUA WELLS	84
380-72799-2	AIEA GULCH WELLS PUMP2	86
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	95
380-72799-4	HALAWA WELLS UNITS 1&2 P1	100

#### Surrogate Legend

OTCSN = n-Octacosane (Surr)

## Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTCSN1 (60-130)
LCS 570-388616/2-A	Lab Control Sample	104
LCSD 570-388616/3-A	Lab Control Sample Dup	95
MB 570-388616/1-A	Method Blank	88

#### Surrogate Legend

OTCSN = n-Octacosane (Surr)

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Matrix: Drinking Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HF2PP1 (54-120)
380-72799-1	MOANALUA WELLS	105
380-72799-2	AIEA GULCH WELLS PUMP2	108
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	109

# Surrogate Summary

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

Job ID: 380-72799-1

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

Matrix: Drinking Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HF2PP1 (54-120)
380-72799-4	HALAWA WELLS UNITS 1&2 P	111

#### Surrogate Legend

HF2PP = Hexafluoro-2-propanol (Surr)

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HF2PP1 (54-120)
380-72649-AK-1 MS	Matrix Spike	103
380-72649-AK-1 MSD	Matrix Spike Duplicate	113
LCS 570-390388/11	Lab Control Sample	112
LCSD 570-390388/12	Lab Control Sample Dup	103
MB 570-390388/10	Method Blank	128 S1+
MRL 570-390388/13	Lab Control Sample	116

#### Surrogate Legend

HF2PP = Hexafluoro-2-propanol (Surr)

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

Matrix: Drinking Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-72799-1	MOANALUA WELLS	94	97	94	98
380-72799-2	AIEA GULCH WELLS PUMP2	95	100	95	103
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	101	97	96	100
380-72799-4	HALAWA WELLS UNITS 1&2 P1	96	102	100	103

#### Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX

## 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 (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-72649-P-1-A MS	Matrix Spike	92	111	101	108
380-72649-Q-1-A MSD	Matrix Spike Duplicate	86	108	95	103
380-72799-9	FB MOANALUA WELLS	97	107	103	109
380-72799-10	FB AIEA GULCH WELLS PUMP	97	101	99	104
380-72799-11	FB AIEA WELLS PUMPS 1&2 (260) P2	91	98	96	102
380-72799-12	FB HALAWA WELLS UNITS 1&2 P1	94	107	104	107

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# Surrogate Summary

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

Job ID: 380-72799-1

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

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
LCS 380-66492/24-A	Lab Control Sample	96	105	104	101
LCSD 380-66492/25-A	Lab Control Sample Dup	98	116	106	116
MBL 380-66492/22-A	Method Blank	105	104	100	99
MRL 380-66492/23-A	Lab Control Sample	95	100	102	103

### 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: 380-72799-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-72799-1	MOANALUA WELLS	98	90	95	87	94	93	86	90
380-72799-2	AIEA GULCH WELLS PUMP2	89	89	92	89	91	91	85	88
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	87	91	86	88	90	91	84	85
380-72799-4	HALAWA WELLS UNITS 1&2 P1	91	91	92	92	92	94	87	91

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-72799-1	MOANALUA WELLS	97	96	103	101	98	98	95	93
380-72799-2	AIEA GULCH WELLS PUMP2	92	90	102	104	98	99	96	100
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	90	87	102	104	97	100	99	99
380-72799-4	HALAWA WELLS UNITS 1&2 P1	94	95	101	103	97	104	103	98

### Surrogate Legend

- 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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-72799-9	FB MOANALUA WELLS	92	86	94	92	92	91	83	83
380-72799-10	FB AIEA GULCH WELLS PUMP	105	93	97	95	94	92	88	91
380-72799-11	FB AIEA WELLS PUMPS 1&2 (260) P2	107	93	99	95	96	96	89	91
380-72799-12	FB HALAWA WELLS UNITS 1&2 P1	97	90	88	94	92	91	87	91
380-72888-B-1-A LMS	Matrix Spike	98	95	96	94	97	95	90	92
380-72888-C-1-A LMSD	Matrix Spike Duplicate	102	89	95	91	91	90	86	90
LCS 380-66552/22-A	Lab Control Sample	102	92	100	96	95	95	90	90
LCSD 380-66552/23-A	Lab Control Sample Dup	102	90	97	94	93	94	87	88
MBL 380-66552/20-A	Method Blank	88	86	89	95	92	92	86	88
MRL 380-66552/21-A	Lab Control Sample	91	91	97	95	95	91	87	87

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# Isotope Dilution Summary

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

Job ID: 380-72799-1

## 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	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-72799-9	FB MOANALUA WELLS	98	96	98	102	94	97	98	91
380-72799-10	FB AIEA GULCH WELLS PUMP	101	96	101	107	96	103	97	94
380-72799-11	FB AIEA WELLS PUMPS 1&2 (260) P2	98	93	102	102	95	97	96	91
380-72799-12	FB HALAWA WELLS UNITS 1&2 P1	95	92	96	99	94	98	95	93
380-72888-B-1-A LMS	Matrix Spike	98	112	105	106	96	99	106	101
380-72888-C-1-A LMSD	Matrix Spike Duplicate	95	107	104	106	99	96	94	91
LCS 380-66552/22-A	Lab Control Sample	98	97	99	100	95	99	103	101
LCSD 380-66552/23-A	Lab Control Sample Dup	93	88	96	96	93	96	99	95
MBL 380-66552/20-A	Method Blank	95	93	95	97	93	101	104	103
MRL 380-66552/21-A	Lab Control Sample	99	96	101	102	97	108	104	100

### 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: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 380-65951/21-A**  
**Matrix: Water**  
**Analysis Batch: 66150**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
2,4'-DDD	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
2,4'-DDE	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
2,4'-DDT	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
2-Methylnaphthalene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
4,4'-DDD	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
4,4'-DDE	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
4,4'-DDT	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Acenaphthene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Acenaphthylene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Acetochlor	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Alachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
alpha-BHC	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
alpha-Chlordane	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Anthracene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 14:45	1
Atrazine	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Benz(a)anthracene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 14:45	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 14:45	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 14:45	1
beta-BHC	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		11/30/23 09:45	12/01/23 14:45	1
Bromacil	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Butachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Butylbenzylphthalate	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 14:45	1
Chlorobenzilate	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Chloroneb	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Chlorpyrifos	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Chrysene	<0.020		0.020	ug/L		11/30/23 09:45	12/01/23 14:45	1
delta-BHC	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		11/30/23 09:45	12/01/23 14:45	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Dieldrin	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 14:45	1
Diethylphthalate	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 14:45	1
Dimethylphthalate	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 14:45	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		11/30/23 09:45	12/01/23 14:45	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Endosulfan sulfate	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Endrin	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Endrin aldehyde	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
EPTC	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1

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# QC Sample Results

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 380-65951/21-A**  
**Matrix: Water**  
**Analysis Batch: 66150**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Fluorene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
gamma-Chlordane	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Heptachlor	<0.040		0.040	ug/L		11/30/23 09:45	12/01/23 14:45	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Hexachlorobenzene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Isophorone	<0.50		0.50	ug/L		11/30/23 09:45	12/01/23 14:45	1
Lindane	<0.040		0.040	ug/L		11/30/23 09:45	12/01/23 14:45	1
Malathion	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Methoxychlor	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Metolachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Molinate	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Naphthalene	<0.30		0.30	ug/L		11/30/23 09:45	12/01/23 14:45	1
Parathion	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Phenanthrene	<0.040		0.040	ug/L		11/30/23 09:45	12/01/23 14:45	1
Propachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Pyrene	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Simazine	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Terbacil	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Terbutylazine	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1
Thiobencarb	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 14:45	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/30/23 09:45	12/01/23 14:45	1
trans-Nonachlor	<0.050		0.050	ug/L		11/30/23 09:45	12/01/23 14:45	1
Trifluralin	<0.099		0.099	ug/L		11/30/23 09:45	12/01/23 14:45	1

<i>Tentatively Identified Compound</i>	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Decane	2.56	T J N	ug/L		2.39	124-18-5	11/30/23 09:45	12/01/23 14:45	1
Heptadecane, 2,6,10,15-tetramethyl-	0.614	T J N	ug/L		2.57	54833-48-6	11/30/23 09:45	12/01/23 14:45	1
n-Hexadecanoic acid	0.930	T J N	ug/L		5.78	57-10-3	11/30/23 09:45	12/01/23 14:45	1
Octadecanoic acid	0.748	T J N	ug/L		6.46	57-11-4	11/30/23 09:45	12/01/23 14:45	1
9-Octadecenamide, (Z)-	0.690	T J N	ug/L		7.43	301-02-0	11/30/23 09:45	12/01/23 14:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	95		70 - 130	11/30/23 09:45	12/01/23 14:45	1
Perylene-d12	71		70 - 130	11/30/23 09:45	12/01/23 14:45	1
Triphenylphosphate	112		70 - 130	11/30/23 09:45	12/01/23 14:45	1

**Lab Sample ID: LCS 380-65951/23-A**  
**Matrix: Water**  
**Analysis Batch: 66150**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.99	2.03		ug/L		102	70 - 130
2,4'-DDD	1.99	1.89		ug/L		95	70 - 130
2,4'-DDE	1.99	1.78		ug/L		90	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 380-65951/23-A**  
**Matrix: Water**  
**Analysis Batch: 66150**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDT	1.99	1.80		ug/L		90	70 - 130
2,4-Dinitrotoluene	1.99	1.82		ug/L		92	70 - 130
2,6-Dinitrotoluene	1.99	1.80		ug/L		91	70 - 130
2-Methylnaphthalene	1.99	2.04		ug/L		103	70 - 130
4,4'-DDD	1.99	1.83		ug/L		92	70 - 130
4,4'-DDE	1.99	1.80		ug/L		91	70 - 130
4,4'-DDT	1.99	1.83		ug/L		92	70 - 130
Acenaphthene	1.99	1.92		ug/L		97	70 - 130
Acenaphthylene	1.99	2.01		ug/L		101	70 - 130
Acetochlor	1.99	2.12		ug/L		107	70 - 130
Alachlor	1.99	2.14		ug/L		108	70 - 130
alpha-BHC	1.99	1.96		ug/L		99	70 - 130
alpha-Chlordane	1.99	1.83		ug/L		92	70 - 130
Anthracene	1.99	1.99		ug/L		100	70 - 130
Atrazine	1.99	2.04		ug/L		103	70 - 130
Benz(a)anthracene	1.99	1.97		ug/L		99	70 - 130
Benzo[a]pyrene	1.99	2.00		ug/L		101	70 - 130
Benzo[b]fluoranthene	1.99	1.96		ug/L		99	70 - 130
Benzo[g,h,i]perylene	1.99	2.03		ug/L		102	70 - 130
Benzo[k]fluoranthene	1.99	1.91		ug/L		96	70 - 130
beta-BHC	1.99	1.98		ug/L		100	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	2.13		ug/L		107	70 - 130
Bromacil	1.99	1.94		ug/L		98	70 - 130
Butachlor	1.99	2.08		ug/L		105	70 - 130
Butylbenzylphthalate	1.99	2.11		ug/L		106	70 - 130
Chlorobenzilate	1.99	2.22		ug/L		112	70 - 130
Chloroneb	1.99	1.89		ug/L		95	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	1.78		ug/L		89	70 - 130
Chlorpyrifos	1.99	1.76		ug/L		89	70 - 130
Chrysene	1.99	1.97		ug/L		99	70 - 130
delta-BHC	1.99	1.93		ug/L		97	70 - 130
Di(2-ethylhexyl)adipate	1.99	2.25		ug/L		113	70 - 130
Dibenz(a,h)anthracene	1.99	2.27		ug/L		114	70 - 130
Diclorvos (DDVP)	1.99	1.70		ug/L		86	70 - 130
Dieldrin	1.99	1.71		ug/L		86	70 - 130
Diethylphthalate	1.99	2.16		ug/L		109	70 - 130
Dimethylphthalate	1.99	2.06		ug/L		104	70 - 130
Di-n-butyl phthalate	3.97	4.11		ug/L		103	70 - 130
Di-n-octyl phthalate	1.99	2.19		ug/L		110	70 - 130
Endosulfan I (Alpha)	1.99	1.94		ug/L		98	70 - 130
Endosulfan II (Beta)	1.99	2.08		ug/L		105	70 - 130
Endosulfan sulfate	1.99	1.70		ug/L		86	70 - 130
Endrin	1.99	1.65		ug/L		83	70 - 130
Endrin aldehyde	1.99	1.83		ug/L		92	70 - 130
EPTC	1.99	2.00		ug/L		101	70 - 130
Fluoranthene	1.99	2.04		ug/L		103	70 - 130
Fluorene	1.99	2.00		ug/L		101	70 - 130
gamma-Chlordane	1.99	1.88		ug/L		94	70 - 130
Heptachlor	1.99	1.86		ug/L		94	70 - 130

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# QC Sample Results

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 380-65951/23-A**  
**Matrix: Water**  
**Analysis Batch: 66150**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor epoxide (isomer B)	1.99	1.95		ug/L		98	70 - 130
Hexachlorobenzene	1.99	1.83		ug/L		92	70 - 130
Hexachlorocyclopentadiene	1.99	1.66		ug/L		84	70 - 130
Indeno[1,2,3-cd]pyrene	1.99	2.23		ug/L		113	70 - 130
Isophorone	1.99	1.97		ug/L		99	70 - 130
Lindane	1.99	2.00		ug/L		101	70 - 130
Malathion	1.99	1.92		ug/L		97	70 - 130
Methoxychlor	1.99	2.00		ug/L		101	70 - 130
Metolachlor	1.99	1.89		ug/L		95	70 - 130
Molinate	1.99	1.95		ug/L		98	70 - 130
Naphthalene	1.99	1.84		ug/L		93	70 - 130
Parathion	1.99	2.08		ug/L		105	70 - 130
Pendimethalin (Penoxaline)	1.99	1.73		ug/L		87	70 - 130
Phenanthrene	1.99	1.92		ug/L		97	70 - 130
Propachlor	1.99	2.05		ug/L		103	70 - 130
Pyrene	1.99	2.02		ug/L		102	70 - 130
Simazine	1.99	2.07		ug/L		104	70 - 130
Terbacil	1.99	2.06		ug/L		104	70 - 130
Terbutylazine	1.99	2.08		ug/L		105	70 - 130
Thiobencarb	1.99	2.01		ug/L		101	70 - 130
trans-Nonachlor	1.99	1.62		ug/L		82	70 - 130
Trifluralin	1.99	1.74		ug/L		88	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	95		70 - 130
Perylene-d12	95		70 - 130
Triphenylphosphate	104		70 - 130

**Lab Sample ID: MRL 380-65951/22-A**  
**Matrix: Water**  
**Analysis Batch: 66150**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0993	0.105		ug/L		106	50 - 150
2,4'-DDD	0.0993	0.111		ug/L		112	50 - 150
2,4'-DDE	0.0993	0.100		ug/L		101	50 - 150
2,4'-DDT	0.0993	0.105		ug/L		105	50 - 150
2,4-Dinitrotoluene	0.0993	0.103		ug/L		103	50 - 150
2,6-Dinitrotoluene	0.0993	0.0927	J	ug/L		93	50 - 150
2-Methylnaphthalene	0.0993	0.101		ug/L		102	50 - 150
4,4'-DDD	0.0993	0.111		ug/L		112	50 - 150
4,4'-DDE	0.0993	0.0878	J	ug/L		88	50 - 150
4,4'-DDT	0.0993	0.112		ug/L		112	50 - 150
Acenaphthene	0.0993	0.0990		ug/L		100	50 - 150
Acenaphthylene	0.0993	0.0895	J	ug/L		90	50 - 150
Acetochlor	0.0497	0.0491	J	ug/L		99	50 - 150
Alachlor	0.0497	0.0615		ug/L		124	50 - 150
alpha-BHC	0.0993	0.0925	J	ug/L		93	50 - 150

# QC Sample Results

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MRL 380-65951/22-A**  
**Matrix: Water**  
**Analysis Batch: 66150**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Anthracene	0.0199	0.0192	J	ug/L		97	50 - 150
Atrazine	0.0497	<0.048		ug/L		91	50 - 150
Benz(a)anthracene	0.0497	0.0421	J	ug/L		85	50 - 150
Benzo[a]pyrene	0.0199	0.0180	J	ug/L		90	50 - 150
Benzo[b]fluoranthene	0.0199	0.0210		ug/L		106	50 - 150
Benzo[g,h,i]perylene	0.0497	0.0483	J	ug/L		97	50 - 150
Benzo[k]fluoranthene	0.0199	0.0186	J	ug/L		94	50 - 150
beta-BHC	0.0993	0.0949	J	ug/L		96	50 - 150
Bis(2-ethylhexyl) phthalate	0.596	0.691		ug/L		116	50 - 150
Bromacil	0.0993	0.109		ug/L		110	50 - 150
Butachlor	0.0497	0.0630		ug/L		127	50 - 150
Butylbenzylphthalate	0.149	0.167	J	ug/L		112	50 - 150
Chlorobenzilate	0.0993	0.0952	J	ug/L		96	50 - 150
Chloroneb	0.0993	0.0857	J	ug/L		86	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0993	0.0807	J	ug/L		81	50 - 150
Chlorpyrifos	0.0497	0.0508		ug/L		102	50 - 150
Chrysene	0.0199	0.0214		ug/L		108	50 - 150
delta-BHC	0.0993	0.101		ug/L		102	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.328	J	ug/L		110	50 - 150
Dibenz(a,h)anthracene	0.0497	0.0447	J	ug/L		90	50 - 150
Diclorvos (DDVP)	0.0497	0.0508		ug/L		102	50 - 150
Dieldrin	0.0993	0.0957	J	ug/L		96	50 - 150
Diethylphthalate	0.149	0.174	J	ug/L		117	50 - 150
Dimethylphthalate	0.298	0.297	J	ug/L		100	50 - 150
Di-n-butyl phthalate	0.298	0.361	J	ug/L		121	49 - 243
Di-n-octyl phthalate	0.0993	0.116		ug/L		117	50 - 150
Endosulfan I (Alpha)	0.0993	0.100		ug/L		101	50 - 150
Endosulfan II (Beta)	0.0993	0.134		ug/L		135	50 - 150
Endosulfan sulfate	0.0993	0.0926	J	ug/L		93	50 - 150
Endrin	0.0993	0.0883	J	ug/L		89	50 - 150
Endrin aldehyde	0.0993	0.0841	J	ug/L		85	50 - 150
EPTC	0.0993	0.0820	J	ug/L		83	50 - 150
Fluoranthene	0.0497	0.0478	J	ug/L		96	50 - 150
Fluorene	0.0497	<0.050		ug/L		97	50 - 150
Heptachlor	0.0397	0.0523		ug/L		132	50 - 150
Heptachlor epoxide (isomer B)	0.0497	0.0586		ug/L		118	50 - 150
Hexachlorobenzene	0.0497	<0.041		ug/L		71	50 - 150
Hexachlorocyclopentadiene	0.0497	0.0456	J	ug/L		92	50 - 150
Indeno[1,2,3-cd]pyrene	0.0497	0.0458	J	ug/L		92	50 - 150
Isophorone	0.0993	0.0999	J	ug/L		101	50 - 150
Lindane	0.0397	0.0373	J	ug/L		94	50 - 150
Malathion	0.0993	0.112		ug/L		112	50 - 150
Methoxychlor	0.0993	0.110		ug/L		111	50 - 150
Metolachlor	0.0497	0.0663		ug/L		133	50 - 150
Molinate	0.0993	0.0840	J	ug/L		85	50 - 150
Naphthalene	0.0993	0.0912	J	ug/L		92	50 - 150
Parathion	0.0993	0.109		ug/L		110	50 - 150
Pendimethalin (Penoxaline)	0.0993	0.0989	J	ug/L		100	50 - 150
Phenanthrene	0.0199	0.0220	J	ug/L		111	50 - 150

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# QC Sample Results

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MRL 380-65951/22-A**  
**Matrix: Water**  
**Analysis Batch: 66150**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Propachlor	0.0497	0.0455	J	ug/L		92	50 - 150
Pyrene	0.0497	0.0468	J	ug/L		94	50 - 150
Simazine	0.0497	0.0435	J	ug/L		88	50 - 150
Terbacil	0.0993	0.101		ug/L		102	50 - 150
Terbutylazine	0.0993	0.0934	J	ug/L		94	50 - 150
Thiobencarb	0.0993	0.115	J	ug/L		116	50 - 150
Trifluralin	0.0993	0.0907	J	ug/L		91	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	97		70 - 130
Perylene-d12	83		70 - 130
Triphenylphosphate	102		70 - 130

**Lab Sample ID: MRL 380-65951/22-A**  
**Matrix: Water**  
**Analysis Batch: 66319**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
alpha-Chlordane	0.0248	<0.029		ug/L		116	50 - 150
gamma-Chlordane	0.0248	0.0304	J	ug/L		122	50 - 150
trans-Nonachlor	0.0248	0.0325	J	ug/L		131	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	97		70 - 130
Perylene-d12	98		70 - 130
Triphenylphosphate	112		70 - 130

**Lab Sample ID: 380-72799-1 MS**  
**Matrix: Drinking Water**  
**Analysis Batch: 66150**

**Client Sample ID: MOANALUA WELLS**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.10		1.98	2.13		ug/L		108	70 - 130
2,4'-DDD	<0.10		1.98	2.03		ug/L		103	70 - 130
2,4'-DDE	<0.10		1.98	1.84		ug/L		93	70 - 130
2,4'-DDT	<0.10		1.98	1.84		ug/L		93	70 - 130
2,4-Dinitrotoluene	<0.10		1.98	1.89		ug/L		95	70 - 130
2,6-Dinitrotoluene	<0.10		1.98	1.91		ug/L		96	70 - 130
2-Methylnaphthalene	<0.10		1.98	2.17		ug/L		110	70 - 130
4,4'-DDD	<0.10		1.98	1.89		ug/L		96	70 - 130
4,4'-DDE	<0.10		1.98	1.91		ug/L		96	70 - 130
4,4'-DDT	<0.10		1.98	1.86		ug/L		94	70 - 130
Acenaphthene	<0.10		1.98	1.99		ug/L		100	70 - 130
Acenaphthylene	<0.10		1.98	2.14		ug/L		108	70 - 130
Acetochlor	<0.10		1.98	2.26		ug/L		114	70 - 130
Alachlor	<0.050		1.98	2.27		ug/L		115	70 - 130
alpha-BHC	<0.10		1.98	1.99		ug/L		101	70 - 130
alpha-Chlordane	<0.050	^3+	1.98	1.95		ug/L		98	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 380-72799-1 MS**  
**Matrix: Drinking Water**  
**Analysis Batch: 66150**

**Client Sample ID: MOANALUA WELLS**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Anthracene	<0.020		1.98	2.06		ug/L		104	70 - 130
Atrazine	<0.050	^3-	1.98	2.13		ug/L		107	70 - 130
Benz(a)anthracene	<0.050		1.98	2.05		ug/L		104	70 - 130
Benzo[a]pyrene	<0.020		1.98	2.03		ug/L		103	70 - 130
Benzo[b]fluoranthene	<0.020		1.98	2.03		ug/L		102	70 - 130
Benzo[g,h,i]perylene	<0.050		1.98	2.20		ug/L		111	70 - 130
Benzo[k]fluoranthene	<0.020		1.98	2.02		ug/L		102	70 - 130
beta-BHC	<0.10		1.98	2.08		ug/L		105	70 - 130
Bis(2-ethylhexyl) phthalate	<0.60		1.98	1.97		ug/L		99	70 - 130
Bromacil	<0.10		1.98	2.07		ug/L		105	70 - 130
Butachlor	<0.050		1.98	2.20		ug/L		111	70 - 130
Butylbenzylphthalate	<0.50		1.98	2.18		ug/L		110	70 - 130
Chlorobenzilate	<0.10		1.98	2.38		ug/L		120	70 - 130
Chloroneb	<0.10		1.98	1.92		ug/L		97	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.10		1.98	1.93		ug/L		98	70 - 130
Chlorpyrifos	<0.050		1.98	1.89		ug/L		95	70 - 130
Chrysene	<0.020		1.98	2.05		ug/L		104	70 - 130
delta-BHC	<0.10		1.98	2.00		ug/L		101	70 - 130
Di(2-ethylhexyl)adipate	<0.60		1.98	2.08		ug/L		105	70 - 130
Dibenz(a,h)anthracene	<0.050		1.98	2.32		ug/L		117	70 - 130
Diclorvos (DDVP)	<0.050		1.98	1.76		ug/L		89	70 - 130
Dieldrin	<0.20		1.98	1.93		ug/L		98	70 - 130
Diethylphthalate	<0.50		1.98	2.17		ug/L		109	70 - 130
Dimethylphthalate	<0.50		1.98	2.13		ug/L		108	70 - 130
Di-n-butyl phthalate	<1.0		3.96	4.36		ug/L		110	70 - 130
Di-n-octyl phthalate	<0.10		1.98	1.85		ug/L		93	70 - 130
Endosulfan I (Alpha)	<0.10		1.98	2.04		ug/L		103	70 - 130
Endosulfan II (Beta)	<0.10		1.98	2.21		ug/L		112	70 - 130
Endosulfan sulfate	<0.10		1.98	1.78		ug/L		90	70 - 130
Endrin	<0.10		1.98	1.79		ug/L		90	70 - 130
Endrin aldehyde	<0.10		1.98	1.71		ug/L		86	70 - 130
EPTC	<0.10		1.98	2.10		ug/L		106	70 - 130
Fluoranthene	<0.10		1.98	2.14		ug/L		108	70 - 130
Fluorene	<0.050		1.98	2.03		ug/L		103	70 - 130
gamma-Chlordane	<0.050	^3+	1.98	1.96		ug/L		98	70 - 130
Heptachlor	<0.040		1.98	2.01		ug/L		102	70 - 130
Heptachlor epoxide (isomer B)	<0.050		1.98	2.15		ug/L		109	70 - 130
Hexachlorobenzene	<0.050		1.98	1.90		ug/L		96	70 - 130
Hexachlorocyclopentadiene	<0.050		1.98	1.87		ug/L		94	70 - 130
Indeno[1,2,3-cd]pyrene	<0.050		1.98	2.41		ug/L		121	70 - 130
Isophorone	<0.50		1.98	2.02		ug/L		102	70 - 130
Lindane	<0.040		1.98	2.02		ug/L		102	70 - 130
Malathion	<0.10		1.98	2.10		ug/L		106	70 - 130
Methoxychlor	<0.10		1.98	2.12		ug/L		107	70 - 130
Metolachlor	<0.050		1.98	2.07		ug/L		104	70 - 130
Molinate	<0.10		1.98	2.00		ug/L		101	70 - 130
Naphthalene	<0.30		1.98	1.96		ug/L		99	70 - 130
Parathion	<0.10		1.98	2.28		ug/L		115	70 - 130
Pendimethalin (Penoxaline)	<0.10		1.98	1.93		ug/L		98	70 - 130

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# QC Sample Results

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 380-72799-1 MS**  
**Matrix: Drinking Water**  
**Analysis Batch: 66150**

**Client Sample ID: MOANALUA WELLS**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Phenanthrene	<0.040		1.98	2.00		ug/L		101	70 - 130
Propachlor	<0.050		1.98	2.11		ug/L		107	70 - 130
Pyrene	<0.050		1.98	2.18		ug/L		110	70 - 130
Simazine	<0.050		1.98	2.16		ug/L		109	70 - 130
Terbacil	<0.10		1.98	2.21		ug/L		112	70 - 130
Terbutylazine	<0.10		1.98	2.19		ug/L		110	70 - 130
Thiobencarb	<0.20		1.98	2.10		ug/L		106	70 - 130
trans-Nonachlor	<0.050		1.98	1.73		ug/L		87	70 - 130
Trifluralin	<0.10		1.98	1.84		ug/L		93	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	96		70 - 130
Triphenylphosphate	104		70 - 130

**Lab Sample ID: 380-72799-2 DU**  
**Matrix: Drinking Water**  
**Analysis Batch: 66150**

**Client Sample ID: AIEA GULCH WELLS PUMP2**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
1-Methylnaphthalene	<0.099		<0.099		ug/L		NC	20
2,4'-DDD	<0.099		<0.099		ug/L		NC	20
2,4'-DDE	<0.099		<0.099		ug/L		NC	20
2,4'-DDT	<0.099		<0.099		ug/L		NC	20
2,4-Dinitrotoluene	<0.099		<0.099		ug/L		NC	20
2,6-Dinitrotoluene	<0.099		<0.099		ug/L		NC	20
2-Methylnaphthalene	<0.099		<0.099		ug/L		NC	20
4,4'-DDD	<0.099		<0.099		ug/L		NC	20
4,4'-DDE	<0.099		<0.099		ug/L		NC	20
4,4'-DDT	<0.099		<0.099		ug/L		NC	20
Acenaphthene	<0.099		<0.099		ug/L		NC	20
Acenaphthylene	<0.099		<0.099		ug/L		NC	20
Acetochlor	<0.099		<0.099		ug/L		NC	20
Alachlor	<0.050		<0.050		ug/L		NC	20
alpha-BHC	<0.099		<0.099		ug/L		NC	20
alpha-Chlordane	<0.050	^3+	<0.050		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.050	^3-	<0.050		ug/L		NC	20
Benz(a)anthracene	<0.050		<0.050		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.050		<0.050		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.099		<0.099		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.60		ug/L		NC	20
Bromacil	<0.099		<0.099		ug/L		NC	20
Butachlor	<0.050		<0.050		ug/L		NC	20
Butylbenzylphthalate	<0.50		<0.50		ug/L		NC	20

# QC Sample Results

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 380-72799-2 DU**  
**Matrix: Drinking Water**  
**Analysis Batch: 66150**

**Client Sample ID: AIEA GULCH WELLS PUMP2**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Analyte	Sample	Sample Qualifier	DU	DU	Unit	D	RPD	Limit
	Result		Result	Qualifier				
Chlorobenzilate	<0.099		<0.099		ug/L		NC	20
Chloroneb	<0.099		<0.099		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.099		<0.099		ug/L		NC	20
Chlorpyrifos	<0.050		<0.050		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.099		<0.099		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.60		ug/L		NC	20
Dibenz(a,h)anthracene	<0.050		<0.050		ug/L		NC	20
Diclorvos (DDVP)	<0.050		<0.050		ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.50		<0.50		ug/L		NC	20
Dimethylphthalate	<0.50		<0.50		ug/L		NC	20
Di-n-butyl phthalate	<0.99		<0.99		ug/L		NC	20
Di-n-octyl phthalate	<0.099		<0.099		ug/L		NC	20
Endosulfan I (Alpha)	<0.099		<0.099		ug/L		NC	20
Endosulfan II (Beta)	<0.099		<0.099		ug/L		NC	20
Endosulfan sulfate	<0.099		<0.099		ug/L		NC	20
Endrin	<0.099		<0.099		ug/L		NC	20
Endrin aldehyde	<0.099		<0.099		ug/L		NC	20
EPTC	<0.099		<0.099		ug/L		NC	20
Fluoranthene	<0.099		<0.099		ug/L		NC	20
Fluorene	<0.050		<0.050		ug/L		NC	20
gamma-Chlordane	<0.050	^3+	<0.050		ug/L		NC	20
Heptachlor	<0.040		<0.040		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.050		<0.050		ug/L		NC	20
Hexachlorobenzene	<0.050		<0.050		ug/L		NC	20
Hexachlorocyclopentadiene	<0.050		<0.050		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.050		<0.050		ug/L		NC	20
Isophorone	<0.50		<0.50		ug/L		NC	20
Lindane	<0.040		<0.040		ug/L		NC	20
Malathion	<0.099		<0.099		ug/L		NC	20
Methoxychlor	<0.099		<0.099		ug/L		NC	20
Metolachlor	<0.050		<0.050		ug/L		NC	20
Molinate	<0.099		<0.099		ug/L		NC	20
Naphthalene	<0.30		<0.30		ug/L		NC	20
Parathion	<0.099		<0.099		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.099		<0.099		ug/L		NC	20
Phenanthrene	<0.040		<0.040		ug/L		NC	20
Propachlor	<0.050		<0.050		ug/L		NC	20
Pyrene	<0.050		<0.050		ug/L		NC	20
Simazine	<0.050		<0.050		ug/L		NC	20
Terbacil	<0.099		<0.099		ug/L		NC	20
Terbutylazine	<0.099		<0.099		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.050		<0.050		ug/L		NC	20
Trifluralin	<0.099		<0.099		ug/L		NC	20



# QC Sample Results

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

Job ID: 380-72799-1

## Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 380-72799-2 DU**  
**Matrix: Drinking Water**  
**Analysis Batch: 66150**

**Client Sample ID: AIEA GULCH WELLS PUMP2**  
**Prep Type: Total/NA**  
**Prep Batch: 65951**

Surrogate	DU DU		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	82		70 - 130
Triphenylphosphate	104		70 - 130

## Method: 8015B GRO LL - Gasoline Range Organics - (GC)

**Lab Sample ID: MB 570-389820/6**  
**Matrix: Water**  
**Analysis Batch: 389820**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			12/06/23 12:21	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	75		38 - 134		12/06/23 12:21	1

**Lab Sample ID: LCS 570-389820/4**  
**Matrix: Water**  
**Analysis Batch: 389820**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	389	397		ug/L		102	78 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	105		38 - 134

**Lab Sample ID: LCSD 570-389820/5**  
**Matrix: Water**  
**Analysis Batch: 389820**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	389	398		ug/L		102	78 - 120	0	10

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	113		38 - 134

**Lab Sample ID: MRL 570-389820/3**  
**Matrix: Water**  
**Analysis Batch: 389820**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	10.0	11.6		ug/L		116	50 - 150

Surrogate	MRL MRL		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	77		38 - 134

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# QC Sample Results

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

Job ID: 380-72799-1

## Method: 8015B GRO LL - Gasoline Range Organics - (GC) (Continued)

**Lab Sample ID: 380-72799-3 MS**  
**Matrix: Drinking Water**  
**Analysis Batch: 389820**

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (C4-C13)	<10		389	388		ug/L		100	68 - 122	
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>MS Limits</b>							
4-Bromofluorobenzene (Surr)	104		38 - 134							

**Lab Sample ID: 380-72799-3 MSD**  
**Matrix: Drinking Water**  
**Analysis Batch: 389820**

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	<10		389	385		ug/L		99	68 - 122	1	18
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD Limits</b>								
4-Bromofluorobenzene (Surr)	105		38 - 134								

## Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

**Lab Sample ID: MB 570-388616/1-A**  
**Matrix: Water**  
**Analysis Batch: 394257**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 388616**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Diesel Range Organics (C10-C24)	<25		25	ug/L		12/01/23 14:27	12/19/23 13:34	1	
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		12/01/23 14:27	12/19/23 13:34	1	
C8-C18	<25		25	ug/L		12/01/23 14:27	12/19/23 13:34	1	
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>MB Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
n-Octacosane (Surr)	88		60 - 130	12/01/23 14:27	12/19/23 13:34	1			

**Lab Sample ID: LCS 570-388616/2-A**  
**Matrix: Water**  
**Analysis Batch: 394257**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 388616**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28	1600	1550		ug/L		97	56 - 127
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>LCS Limits</b>				
n-Octacosane (Surr)	104		60 - 130				

**Lab Sample ID: LCSD 570-388616/3-A**  
**Matrix: Water**  
**Analysis Batch: 394257**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 388616**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	1600	1260		ug/L		79	56 - 127	20	23

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# QC Sample Results

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

Job ID: 380-72799-1

## Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level (Continued)

**Lab Sample ID: LCSD 570-388616/3-A**  
**Matrix: Water**  
**Analysis Batch: 394257**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 388616**

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>n</i> -Octacosane (Surr)	95		60 - 130

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

**Lab Sample ID: MB 570-390388/10**  
**Matrix: Water**  
**Analysis Batch: 390388**

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Ethanol	<0.10		0.10	mg/L			12/07/23 18:07	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	128	S1+	54 - 120				12/07/23 18:07	1

**Lab Sample ID: LCS 570-390388/11**  
**Matrix: Water**  
**Analysis Batch: 390388**

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec	Limits
	Added	Result	Qualifier					
Ethanol	2.00	2.22		mg/L		111		78 - 131
Surrogate	LCS	LCS	Limits					
Hexafluoro-2-propanol (Surr)	112		54 - 120					

**Lab Sample ID: LCSD 570-390388/12**  
**Matrix: Water**  
**Analysis Batch: 390388**

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

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Added	Result	Qualifier							
Ethanol	2.00	2.11		mg/L		106		78 - 131	5	25
Surrogate	LCSD	LCSD	Limits							
Hexafluoro-2-propanol (Surr)	103		54 - 120							

**Lab Sample ID: MRL 570-390388/13**  
**Matrix: Water**  
**Analysis Batch: 390388**

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

Analyte	Spike	MRL	MRL	Unit	D	%Rec	%Rec	Limits
	Added	Result	Qualifier					
Ethanol	0.100	0.0929	J	mg/L		93		50 - 150
Surrogate	MRL	MRL	Limits					
Hexafluoro-2-propanol (Surr)	116		54 - 120					

# QC Sample Results

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

Job ID: 380-72799-1

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

**Lab Sample ID: 380-72649-AK-1 MS**  
**Matrix: Water**  
**Analysis Batch: 390388**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
Ethanol	<0.10		2.00	2.23		mg/L		112	20 - 173	
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>MS Limits</b>							
Hexafluoro-2-propanol (Surr)	103		54 - 120							

**Lab Sample ID: 380-72649-AK-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 390388**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethanol	<0.10		2.00	1.99		mg/L		100	20 - 173	11	21
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD Limits</b>								
Hexafluoro-2-propanol (Surr)	113		54 - 120								

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

**Lab Sample ID: MBL 380-66552/20-A**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1

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# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: MBL 380-66552/20-A**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		12/05/23 12:34	12/07/23 06:10	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	88		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C6 PFDA	86		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C5 PFHxA	89		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C4 PFHpA	95		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C8 PFOA	92		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C9 PFNA	92		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C7 PFUnA	86		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C2 PFDoA	88		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C4 PFBA	95		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C5 PFPeA	93		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C3 PFBS	95		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C3 PFHxS	97		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C8 PFOS	93		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C2-4:2-FTS	101		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C2-6:2-FTS	104		50 - 200	12/05/23 12:34	12/07/23 06:10	1
13C2-8:2-FTS	103		50 - 200	12/05/23 12:34	12/07/23 06:10	1

**Lab Sample ID: LCS 380-66552/22-A**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	120		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	119		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	123		ng/L		103	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	124		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	123		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	120	122		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	120	122		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	122		ng/L		101	70 - 130

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# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: LCS 380-66552/22-A**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	120	121		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	120	117		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	120	122		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	122		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	120	123		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	122		ng/L		102	70 - 130
Perfluorobutanoic acid (PFBA)	120	120		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	118		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	113		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	118		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	117		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	120		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	120		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	127		ng/L		106	70 - 130
Perfluoropentanoic acid (PFPeA)	120	120		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	127		ng/L		106	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	116		ng/L		96	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	92		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	96		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	95		50 - 200
13C7 PFUnA	90		50 - 200
13C2 PFDoA	90		50 - 200
13C4 PFBA	98		50 - 200
13C5 PFPeA	97		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	99		50 - 200
13C2-6:2-FTS	103		50 - 200
13C2-8:2-FTS	101		50 - 200

# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: LCSD 380-66552/23-A**

**Matrix: Water**

**Analysis Batch: 66760**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 66552**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	121		ng/L		101	70 - 130	0		30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	121		ng/L		101	70 - 130	2		30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	126		ng/L		105	70 - 130	3		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	120		ng/L		100	70 - 130	3		30
Perfluorobutanesulfonic acid (PFBS)	120	126		ng/L		105	70 - 130	2		30
Perfluorodecanoic acid (PFDA)	120	127		ng/L		106	70 - 130	4		30
Perfluorododecanoic acid (PFDoA)	120	123		ng/L		102	70 - 130	1		30
Perfluoroheptanoic acid (PFHpA)	120	126		ng/L		105	70 - 130	3		30
Perfluorohexanesulfonic acid (PFHxS)	120	122		ng/L		102	70 - 130	1		30
Perfluorohexanoic acid (PFHxA)	120	122		ng/L		102	70 - 130	4		30
Perfluorononanoic acid (PFNA)	120	125		ng/L		105	70 - 130	3		30
Perfluorooctanesulfonic acid (PFOS)	120	123		ng/L		103	70 - 130	1		30
Perfluorooctanoic acid (PFOA)	120	124		ng/L		103	70 - 130	1		30
Perfluoroundecanoic acid (PFUnA)	120	126		ng/L		105	70 - 130	3		30
Perfluorobutanoic acid (PFBA)	120	111		ng/L		92	70 - 130	8		30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	123		ng/L		103	70 - 130	4		30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	123		ng/L		103	70 - 130	9		30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	119		ng/L		99	70 - 130	1		30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	113		ng/L		94	70 - 130	3		30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	125		ng/L		104	70 - 130	4		30
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	115		ng/L		96	70 - 130	4		30
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	126		ng/L		105	70 - 130	1		30
Perfluoropentanoic acid (PFPeA)	120	120		ng/L		100	70 - 130	1		30
Perfluoroheptanesulfonic acid (PFHpS)	120	126		ng/L		105	70 - 130	1		30
Perfluoropentanesulfonic acid (PFPeS)	120	118		ng/L		99	70 - 130	2		30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	90		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	94		50 - 200
13C8 PFOA	93		50 - 200
13C9 PFNA	94		50 - 200

# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: LCSD 380-66552/23-A**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C7 PFUnA	87		50 - 200
13C2 PFDoA	88		50 - 200
13C4 PFBA	93		50 - 200
13C5 PFPeA	88		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	96		50 - 200
13C8 PFOS	93		50 - 200
13C2-4:2-FTS	96		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	95		50 - 200

**Lab Sample ID: MRL 380-66552/21-A**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.05	J	ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.07	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.03	J	ng/L		101	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.33	J	ng/L		116	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.03	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.19	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.27	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.39	J	ng/L		119	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.30	J	ng/L		115	50 - 150



# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: MRL 380-66552/21-A**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.15	J	ng/L		107	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.24	J	ng/L		112	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.00	J	ng/L		100	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	91		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	95		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	91		50 - 200
13C7 PFUnA	87		50 - 200
13C2 PFDoA	87		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	96		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	102		50 - 200
13C8 PFOS	97		50 - 200
13C2-4:2-FTS	108		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	100		50 - 200

**Lab Sample ID: 380-72888-B-1-A LMS**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.06		ng/L		103	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.12		ng/L		106	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.09		ng/L		104	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.22		ng/L		110	50 - 150
Perfluorobutanesulfonic acid (PFBS)	3.9		2.01	5.84		ng/L		95	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.23		ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	1.86	J	ng/L		93	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	3.04		ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	4.5		2.01	6.37		ng/L		92	50 - 150
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.57		ng/L		110	50 - 150

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# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: 380-72888-B-1-A LMS**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	<2.0		2.01	3.22		ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	7.5		2.01	9.25		ng/L		87	50 - 150
Perfluorooctanoic acid (PFOA)	4.4		2.01	6.27		ng/L		95	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	1.92	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	5.7		2.01	7.52		ng/L		91	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.09		ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.52		ng/L		126	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.01	2.13		ng/L		106	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	2.17		ng/L		108	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.01	2.37		ng/L		118	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	2.05		ng/L		102	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	2.13		ng/L		106	50 - 150
Perfluoropentanoic acid (PFPeA)	<2.0		2.01	3.12		ng/L		97	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	2.37		ng/L		118	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	2.58		ng/L		85	50 - 150
		<b>LMS</b>	<b>LMS</b>						
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
13C3 HFPO-DA	98		50 - 200						
13C6 PFDA	95		50 - 200						
13C5 PFHxA	96		50 - 200						
13C4 PFHpA	94		50 - 200						
13C8 PFOA	97		50 - 200						
13C9 PFNA	95		50 - 200						
13C7 PFUnA	90		50 - 200						
13C2 PFDoA	92		50 - 200						
13C4 PFBA	98		50 - 200						
13C5 PFPeA	112		50 - 200						
13C3 PFBS	105		50 - 200						
13C3 PFHxS	106		50 - 200						
13C8 PFOS	96		50 - 200						
13C2-4:2-FTS	99		50 - 200						
13C2-6:2-FTS	106		50 - 200						
13C2-8:2-FTS	101		50 - 200						

# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: 380-72888-C-1-A LMSD**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Analyte	Sample	Sample	Spike	LMSD	LMSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.09		ng/L		104	50 - 150	2	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.16		ng/L		107	50 - 150	2	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.06		ng/L		103	50 - 150	1	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.14		ng/L		106	50 - 150	4	50
Perfluorobutanesulfonic acid (PFBS)	3.9		2.01	5.87		ng/L		96	50 - 150	0	50
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.29		ng/L		114	50 - 150	3	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	1.91	J	ng/L		95	50 - 150	2	50
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	3.06		ng/L		100	50 - 150	1	50
Perfluorohexanesulfonic acid (PFHxS)	4.5		2.01	6.58		ng/L		103	50 - 150	3	50
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.57		ng/L		110	50 - 150	0	50
Perfluorononanoic acid (PFNA)	<2.0		2.01	3.27		ng/L		114	50 - 150	2	50
Perfluorooctanesulfonic acid (PFOS)	7.5		2.01	9.28		ng/L		88	50 - 150	0	50
Perfluorooctanoic acid (PFOA)	4.4		2.01	6.62		ng/L		112	50 - 150	5	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.02		ng/L		100	50 - 150	5	50
Perfluorobutanoic acid (PFBA)	5.7		2.01	7.71		ng/L		100	50 - 150	2	50
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.15		ng/L		107	50 - 150	3	50
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.16		ng/L		107	50 - 150	15	50
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.01	2.23		ng/L		111	50 - 150	5	50
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	2.11		ng/L		105	50 - 150	2	50
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.01	2.70		ng/L		134	50 - 150	13	50
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	2.14		ng/L		106	50 - 150	4	50
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	2.18		ng/L		108	50 - 150	2	50
Perfluoropentanoic acid (PFPeA)	<2.0		2.01	3.17		ng/L		100	50 - 150	2	50
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	2.48		ng/L		123	50 - 150	5	50
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	2.60		ng/L		86	50 - 150	1	50

Isotope Dilution	LMSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	89		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	91		50 - 200
13C8 PFOA	91		50 - 200
13C9 PFNA	90		50 - 200

# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: 380-72888-C-1-A LMSD**  
**Matrix: Water**  
**Analysis Batch: 66760**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 66552**

Isotope Dilution	LMSD		Limits
	%Recovery	Qualifier	
13C7 PFUnA	86		50 - 200
13C2 PFDoA	90		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	107		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	99		50 - 200
13C2-4:2-FTS	96		50 - 200
13C2-6:2-FTS	94		50 - 200
13C2-8:2-FTS	91		50 - 200

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

**Lab Sample ID: MBL 380-66492/22-A**  
**Matrix: Water**  
**Analysis Batch: 66575**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 66492**

Analyte	MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		12/05/23 05:42	12/05/23 16:07	1

Surrogate	MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
d5-NEtFOSAA	105		70 - 130	12/05/23 05:42	12/05/23 16:07	1
13C2 PFHxA	104		70 - 130	12/05/23 05:42	12/05/23 16:07	1
13C2 PFDA	100		70 - 130	12/05/23 05:42	12/05/23 16:07	1
13C3-GenX	99		70 - 130	12/05/23 05:42	12/05/23 16:07	1

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# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: LCS 380-66492/24-A**  
**Matrix: Water**  
**Analysis Batch: 66575**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 66492**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.0	21.1		ng/L		85	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.0	20.1		ng/L		80	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.0	20.2		ng/L		81	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	21.7		ng/L		87	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	21.8		ng/L		87	70 - 130
Perfluorohexanoic acid (PFHxA)	25.0	21.9		ng/L		88	70 - 130
Perfluorododecanoic acid (PFDoA)	25.0	20.0		ng/L		80	70 - 130
Perfluorooctanoic acid (PFOA)	25.0	21.1		ng/L		84	70 - 130
Perfluorodecanoic acid (PFDA)	25.0	21.6		ng/L		86	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.0	21.6		ng/L		86	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.0	21.4		ng/L		86	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.0	21.0		ng/L		84	70 - 130
Perfluorononanoic acid (PFNA)	25.0	22.1		ng/L		88	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.0	24.2		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.0	21.9		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.0	21.8		ng/L		87	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.0	20.4		ng/L		82	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.0	21.5		ng/L		86	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	96		70 - 130
13C2 PFHxA	105		70 - 130
13C2 PFDA	104		70 - 130
13C3-GenX	101		70 - 130

**Lab Sample ID: LCSD 380-66492/25-A**  
**Matrix: Water**  
**Analysis Batch: 66575**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 66492**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.0	24.6		ng/L		98	70 - 130	15	30
Perfluorooctanesulfonic acid (PFOS)	25.0	20.5		ng/L		82	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	25.0	21.2		ng/L		85	70 - 130	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	22.8		ng/L		91	70 - 130	5	30

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# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: LCSD 380-66492/25-A**  
**Matrix: Water**  
**Analysis Batch: 66575**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 66492**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	22.8		ng/L		91	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	25.0	24.7		ng/L		99	70 - 130	12	30
Perfluorododecanoic acid (PFDoA)	25.0	21.3		ng/L		85	70 - 130	6	30
Perfluorooctanoic acid (PFOA)	25.0	22.1		ng/L		89	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	25.0	21.9		ng/L		87	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	25.0	23.5		ng/L		94	70 - 130	8	30
Perfluorobutanesulfonic acid (PFBS)	25.0	22.9		ng/L		92	70 - 130	7	30
Perfluoroheptanoic acid (PFHpA)	25.0	22.6		ng/L		90	70 - 130	7	30
Perfluorononanoic acid (PFNA)	25.0	22.4		ng/L		90	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	25.0	24.5		ng/L		98	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	25.0	23.5		ng/L		94	70 - 130	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.0	22.7		ng/L		91	70 - 130	4	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.0	21.6		ng/L		87	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.0	23.4		ng/L		93	70 - 130	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	116		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	116		70 - 130

**Lab Sample ID: MRL 380-66492/23-A**  
**Matrix: Water**  
**Analysis Batch: 66575**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 66492**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.53	J	ng/L		77	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.49	J	ng/L		80	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.55	J	ng/L		77	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.46	J	ng/L		73	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.56	J	ng/L		78	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.62	J	ng/L		81	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.60	J	ng/L		80	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.64	J	ng/L		82	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.59	J	ng/L		79	50 - 150

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# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: MRL 380-66492/23-A**  
**Matrix: Water**  
**Analysis Batch: 66575**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 66492**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.45	J	ng/L		79	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.34	J	ng/L		76	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.58	J	ng/L		79	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.62	J	ng/L		81	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.87	J	ng/L		93	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	1.59	J	ng/L		80	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.46	J	ng/L		78	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.47	J	ng/L		77	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.49	J	ng/L		78	50 - 150
<b>Surrogate</b>	<b>%Recovery</b>	<b>MRL</b>	<b>MRL Qualifier</b>	<b>Limits</b>			
d5-NEtFOSAA	95			70 - 130			
13C2 PFHxA	100			70 - 130			
13C2 PFDA	102			70 - 130			
13C3-GenX	103			70 - 130			

**Lab Sample ID: 380-72649-P-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 66575**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 66492**

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	23.2		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	21.5		ng/L		80	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	19.4		ng/L		78	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	21.5		ng/L		86	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	22.0		ng/L		88	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	23.2		ng/L		88	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	18.3		ng/L		73	70 - 130
Perfluorooctanoic acid (PFOA)	2.0		25.1	23.9		ng/L		87	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	21.8		ng/L		87	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	23.4		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	21.9		ng/L		84	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	22.8		ng/L		89	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	23.3		ng/L		93	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	18.0		ng/L		72	70 - 130

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# QC Sample Results

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

Job ID: 380-72799-1

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

**Lab Sample ID: 380-72649-P-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 66575**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 66492**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	18.2		ng/L		73	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	22.4		ng/L		90	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	18.0		ng/L		72	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	23.7		ng/L		95	70 - 130
<b>Surrogate</b>		<b>MS %Recovery</b>	<b>MS Qualifier</b>		<b>Limits</b>				
d5-NEtFOSAA		92			70 - 130				
13C2 PFHxA		111			70 - 130				
13C2 PFDA		101			70 - 130				
13C3-GenX		108			70 - 130				

**Lab Sample ID: 380-72649-Q-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 66575**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 66492**

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	22.8		ng/L		91	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	20.8		ng/L		77	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	19.3		ng/L		77	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	21.8		ng/L		87	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	22.7		ng/L		90	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	22.5		ng/L		86	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	17.6		ng/L		70	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	2.0		25.1	24.4		ng/L		89	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	21.3		ng/L		85	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	23.4		ng/L		93	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	21.8		ng/L		84	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	23.1		ng/L		90	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	22.7		ng/L		90	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	17.9		ng/L		71	70 - 130	0	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	17.7		ng/L		71	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	22.6		ng/L		90	70 - 130	1	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	17.5		ng/L		70	70 - 130	3	30

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# QC Sample Results

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

Job ID: 380-72799-1

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

Lab Sample ID: 380-72649-Q-1-A MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 66575

Prep Batch: 66492

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	23.5		ng/L		94	70 - 130	1	30
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD Limits</b>								
d5-NEtFOSAA	86		70 - 130								
13C2 PFHxA	108		70 - 130								
13C2 PFDA	95		70 - 130								
13C3-GenX	103		70 - 130								

# QC Association Summary

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

Job ID: 380-72799-1

## GC/MS Semi VOA

### Prep Batch: 65951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	525.2	
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	525.2	
MB 380-65951/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-65951/23-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-65951/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-72799-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-72799-2 DU	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	525.2	

### Analysis Batch: 66150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	65951
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	525.2	65951
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	65951
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	525.2	65951
MB 380-65951/21-A	Method Blank	Total/NA	Water	525.2	65951
LCS 380-65951/23-A	Lab Control Sample	Total/NA	Water	525.2	65951
MRL 380-65951/22-A	Lab Control Sample	Total/NA	Water	525.2	65951
380-72799-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	525.2	65951
380-72799-2 DU	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	525.2	65951

### Analysis Batch: 66319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	525.2	65951
MRL 380-65951/22-A	Lab Control Sample	Total/NA	Water	525.2	65951

## GC VOA

### Analysis Batch: 389820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	8015B GRO LL	
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B GRO LL	
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	8015B GRO LL	
380-72799-5	TB MOANALUA WELLS	Total/NA	Water	8015B GRO LL	
380-72799-6	TB AIEA GULCH WELLS PUMP2	Total/NA	Water	8015B GRO LL	
380-72799-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	8015B GRO LL	
380-72799-8	TB HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	8015B GRO LL	
MB 570-389820/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-389820/4	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-389820/5	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-389820/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-72799-3 MS	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B GRO LL	
380-72799-3 MSD	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B GRO LL	

## GC Semi VOA

### Prep Batch: 388616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	3510C	
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	3510C	

Eurofins Eaton Analytical Pomona

# QC Association Summary

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

Job ID: 380-72799-1

## GC Semi VOA (Continued)

### Prep Batch: 388616 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	3510C	
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	3510C	
MB 570-388616/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-388616/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-388616/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 390388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B	
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	8015B	
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B	
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	8015B	
MB 570-390388/10	Method Blank	Total/NA	Water	8015B	
LCS 570-390388/11	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-390388/12	Lab Control Sample Dup	Total/NA	Water	8015B	
MRL 570-390388/13	Lab Control Sample	Total/NA	Water	8015B	
380-72649-AK-1 MS	Matrix Spike	Total/NA	Water	8015B	
380-72649-AK-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	

### Analysis Batch: 394257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B	388616
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	8015B	388616
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B	388616
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	8015B	388616
MB 570-388616/1-A	Method Blank	Total/NA	Water	8015B	388616
LCS 570-388616/2-A	Lab Control Sample	Total/NA	Water	8015B	388616
LCSD 570-388616/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	388616

## LCMS

### Prep Batch: 66492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	537.1 DW	
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1 DW	
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	537.1 DW	
380-72799-9	FB MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-72799-10	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1 DW	
380-72799-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-72799-12	FB HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1 DW	
MBL 380-66492/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-66492/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-66492/25-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-66492/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-72649-P-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-72649-Q-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Prep Batch: 66552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	533	

# QC Association Summary

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

Job ID: 380-72799-1

## LCMS (Continued)

### Prep Batch: 66552 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	533	
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	533	
380-72799-9	FB MOANALUA WELLS	Total/NA	Water	533	
380-72799-10	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	533	
380-72799-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-72799-12	FB HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	
MBL 380-66552/20-A	Method Blank	Total/NA	Water	533	
LCS 380-66552/22-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-66552/23-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-66552/21-A	Lab Control Sample	Total/NA	Water	533	
380-72888-B-1-A LMS	Matrix Spike	Total/NA	Water	533	
380-72888-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	

### Analysis Batch: 66575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1	66492
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	537.1	66492
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1	66492
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	537.1	66492
380-72799-9	FB MOANALUA WELLS	Total/NA	Water	537.1	66492
380-72799-10	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1	66492
380-72799-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	66492
380-72799-12	FB HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1	66492
MBL 380-66492/22-A	Method Blank	Total/NA	Water	537.1	66492
LCS 380-66492/24-A	Lab Control Sample	Total/NA	Water	537.1	66492
LCSD 380-66492/25-A	Lab Control Sample Dup	Total/NA	Water	537.1	66492
MRL 380-66492/23-A	Lab Control Sample	Total/NA	Water	537.1	66492
380-72649-P-1-A MS	Matrix Spike	Total/NA	Water	537.1	66492
380-72649-Q-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	66492

### Analysis Batch: 66760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-72799-1	MOANALUA WELLS	Total/NA	Drinking Water	533	66552
380-72799-2	AIEA GULCH WELLS PUMP2	Total/NA	Drinking Water	533	66552
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	66552
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Drinking Water	533	66552
380-72799-9	FB MOANALUA WELLS	Total/NA	Water	533	66552
380-72799-10	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	533	66552
380-72799-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	66552
380-72799-12	FB HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	66552
MBL 380-66552/20-A	Method Blank	Total/NA	Water	533	66552
LCS 380-66552/22-A	Lab Control Sample	Total/NA	Water	533	66552
LCSD 380-66552/23-A	Lab Control Sample Dup	Total/NA	Water	533	66552
MRL 380-66552/21-A	Lab Control Sample	Total/NA	Water	533	66552
380-72888-B-1-A LMS	Matrix Spike	Total/NA	Water	533	66552
380-72888-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	66552

# Lab Chronicle

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

Job ID: 380-72799-1

## Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-72799-1

Date Collected: 11/27/23 10:28

Matrix: Drinking Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			65951	OTM3	EA POM	11/30/23 09:45
Total/NA	Analysis	525.2		1	66150	Q8LA	EA POM	12/01/23 15:05
Total/NA	Analysis	8015B GRO LL		1	389820	A9VE	EET CAL 4	12/06/23 15:16
Total/NA	Prep	3510C			388616	TR8L	EET CAL 4	12/01/23 14:27
Total/NA	Analysis	8015B		1	394257	SP9M	EET CAL 4	12/19/23 14:37
Total/NA	Analysis	8015B		1	390388	J7WE	EET CAL 4	12/07/23 20:39
Total/NA	Prep	533			66552	J9ZD	EA POM	12/05/23 12:34
Total/NA	Analysis	533		1	66760	R6YA	EA POM	12/07/23 08:36
Total/NA	Prep	537.1 DW			66492	SL5Q	EA POM	12/05/23 05:42
Total/NA	Analysis	537.1		1	66575	SZ9R	EA POM	12/05/23 18:24

## Client Sample ID: AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-72799-2

Date Collected: 11/27/23 11:33

Matrix: Drinking Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			65951	OTM3	EA POM	11/30/23 09:45
Total/NA	Analysis	525.2		1	66150	Q8LA	EA POM	12/01/23 15:24
Total/NA	Analysis	8015B GRO LL		1	389820	A9VE	EET CAL 4	12/06/23 15:42
Total/NA	Prep	3510C			388616	TR8L	EET CAL 4	12/01/23 14:27
Total/NA	Analysis	8015B		1	394257	SP9M	EET CAL 4	12/19/23 14:58
Total/NA	Analysis	8015B		1	390388	J7WE	EET CAL 4	12/07/23 21:01
Total/NA	Prep	533			66552	J9ZD	EA POM	12/05/23 12:34
Total/NA	Analysis	533		1	66760	R6YA	EA POM	12/07/23 08:57
Total/NA	Prep	537.1 DW			66492	SL5Q	EA POM	12/05/23 05:42
Total/NA	Analysis	537.1		1	66575	SZ9R	EA POM	12/05/23 18:34

## Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-72799-3

Date Collected: 11/27/23 11:57

Matrix: Drinking Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			65951	OTM3	EA POM	11/30/23 09:45
Total/NA	Analysis	525.2		1	66150	Q8LA	EA POM	12/01/23 16:44
Total/NA	Analysis	8015B GRO LL		1	389820	A9VE	EET CAL 4	12/06/23 14:50
Total/NA	Prep	3510C			388616	TR8L	EET CAL 4	12/01/23 14:27
Total/NA	Analysis	8015B		1	394257	SP9M	EET CAL 4	12/19/23 15:18
Total/NA	Analysis	8015B		1	390388	J7WE	EET CAL 4	12/07/23 21:23
Total/NA	Prep	533			66552	J9ZD	EA POM	12/05/23 12:34
Total/NA	Analysis	533		1	66760	R6YA	EA POM	12/07/23 09:08
Total/NA	Prep	537.1 DW			66492	SL5Q	EA POM	12/05/23 05:42
Total/NA	Analysis	537.1		1	66575	SZ9R	EA POM	12/05/23 18:54

# Lab Chronicle

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

Job ID: 380-72799-1

**Client Sample ID: HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-4**

Date Collected: 11/27/23 11:00

Matrix: Drinking Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			65951	OTM3	EA POM	11/30/23 11:10
Total/NA	Analysis	525.2		1	66150	Q8LA	EA POM	12/01/23 17:04
Total/NA	Prep	525.2			65951	OTM3	EA POM	11/30/23 11:10
Total/NA	Analysis	525.2		1	66319	Q8LA	EA POM	12/03/23 13:41
Total/NA	Analysis	8015B GRO LL		1	389820	A9VE	EET CAL 4	12/06/23 16:09
Total/NA	Prep	3510C			388616	TR8L	EET CAL 4	12/01/23 14:27
Total/NA	Analysis	8015B		1	394257	SP9M	EET CAL 4	12/19/23 15:39
Total/NA	Analysis	8015B		1	390388	J7WE	EET CAL 4	12/07/23 21:45
Total/NA	Prep	533			66552	J9ZD	EA POM	12/05/23 12:34
Total/NA	Analysis	533		1	66760	R6YA	EA POM	12/07/23 09:17
Total/NA	Prep	537.1 DW			66492	SL5Q	EA POM	12/05/23 05:42
Total/NA	Analysis	537.1		1	66575	SZ9R	EA POM	12/05/23 19:06

**Client Sample ID: TB MOANALUA WELLS**

**Lab Sample ID: 380-72799-5**

Date Collected: 11/27/23 10:28

Matrix: Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	389820	A9VE	EET CAL 4	12/06/23 12:57

**Client Sample ID: TB AIEA GULCH WELLS PUMP2**

**Lab Sample ID: 380-72799-6**

Date Collected: 11/27/23 11:33

Matrix: Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	389820	A9VE	EET CAL 4	12/06/23 13:31

**Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2**

**Lab Sample ID: 380-72799-7**

Date Collected: 11/27/23 11:57

Matrix: Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	389820	A9VE	EET CAL 4	12/06/23 13:58

**Client Sample ID: TB HALAWA WELLS UNITS 1&2 P1**

**Lab Sample ID: 380-72799-8**

Date Collected: 11/27/23 11:00

Matrix: Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	389820	A9VE	EET CAL 4	12/06/23 14:24

# Lab Chronicle

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

Job ID: 380-72799-1

## Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-72799-9

Date Collected: 11/27/23 10:28

Matrix: Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			66552	J9ZD	EA POM	12/05/23 12:34
Total/NA	Analysis	533		1	66760	R6YA	EA POM	12/07/23 09:27
Total/NA	Prep	537.1 DW			66492	SL5Q	EA POM	12/05/23 05:42
Total/NA	Analysis	537.1		1	66575	SZ9R	EA POM	12/05/23 19:15

## Client Sample ID: FB AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-72799-10

Date Collected: 11/27/23 11:33

Matrix: Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			66552	J9ZD	EA POM	12/05/23 12:34
Total/NA	Analysis	533		1	66760	R6YA	EA POM	12/07/23 09:37
Total/NA	Prep	537.1 DW			66492	SL5Q	EA POM	12/05/23 05:42
Total/NA	Analysis	537.1		1	66575	SZ9R	EA POM	12/05/23 19:25

## Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-72799-11

Date Collected: 11/27/23 11:57

Matrix: Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			66552	J9ZD	EA POM	12/05/23 12:34
Total/NA	Analysis	533		1	66760	R6YA	EA POM	12/07/23 09:46
Total/NA	Prep	537.1 DW			66492	SL5Q	EA POM	12/05/23 05:42
Total/NA	Analysis	537.1		1	66575	SZ9R	EA POM	12/05/23 19:35

## Client Sample ID: FB HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-72799-12

Date Collected: 11/27/23 11:00

Matrix: Water

Date Received: 11/29/23 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			66552	J9ZD	EA POM	12/05/23 12:34
Total/NA	Analysis	533		1	66760	R6YA	EA POM	12/07/23 09:56
Total/NA	Prep	537.1 DW			66492	SL5Q	EA POM	12/05/23 05:42
Total/NA	Analysis	537.1		1	66575	SZ9R	EA POM	12/05/23 19:44

**Laboratory References:**

- = Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806
- EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100
- EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

# Accreditation/Certification Summary

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

Job ID: 380-72799-1

## Laboratory: Eurofins Eaton Analytical Pomona

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	1-Methylnaphthalene
525.2	525.2	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	2-Methylnaphthalene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525.2	525.2	Drinking Water	4,4'-DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	Anthracene
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[b]fluoranthene
525.2	525.2	Drinking Water	Benzo[g,h,i]perylene
525.2	525.2	Drinking Water	Benzo[k]fluoranthene
525.2	525.2	Drinking Water	beta-BHC
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	Chlorobenzilate
525.2	525.2	Drinking Water	Chloroneb
525.2	525.2	Drinking Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Drinking Water	Chlorpyrifos
525.2	525.2	Drinking Water	Chrysene
525.2	525.2	Drinking Water	delta-BHC
525.2	525.2	Drinking Water	Dibenz(a,h)anthracene
525.2	525.2	Drinking Water	Diclorvos (DDVP)
525.2	525.2	Drinking Water	Diethylphthalate
525.2	525.2	Drinking Water	Dimethylphthalate
525.2	525.2	Drinking Water	Di-n-butyl phthalate
525.2	525.2	Drinking Water	Di-n-octyl phthalate
525.2	525.2	Drinking Water	Endosulfan I (Alpha)
525.2	525.2	Drinking Water	Endosulfan II (Beta)
525.2	525.2	Drinking Water	Endosulfan sulfate
525.2	525.2	Drinking Water	Endrin aldehyde
525.2	525.2	Drinking Water	EPTC
525.2	525.2	Drinking Water	Fluoranthene
525.2	525.2	Drinking Water	Fluorene
525.2	525.2	Drinking Water	gamma-Chlordane
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Drinking Water	Isophorone



# Accreditation/Certification Summary

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

Job ID: 380-72799-1

## Laboratory: Eurofins Eaton Analytical Pomona (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
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The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbutylazine
525.2	525.2	Drinking Water	Thiobencarb
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor
525.2	525.2	Drinking Water	Trifluralin
533	533	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
533	533	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Drinking Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Drinking Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Drinking Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Drinking Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Drinking Water	Perfluorobutanoic acid (PFBA)
533	533	Drinking Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Drinking Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Drinking Water	Perfluoropentanoic acid (PFPeA)
533	533	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)

# Accreditation/Certification Summary

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

Job ID: 380-72799-1

## Laboratory: Eurofins Eaton Analytical Pomona (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
533	533	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Water	Perfluorobutanoic acid (PFBA)
533	533	Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Water	Perfluoropentanoic acid (PFPeA)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
537.1	537.1 DW	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

## Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-24
California	Los Angeles County Sanitation Districts	10109	08-01-24
California	State	3082	07-31-24
Kansas	NELAP	E-10420	08-01-24
Nevada	State	CA00111	07-31-24
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	06-08-26
Washington	State	C916-18	10-11-24

# Method Summary

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

Job ID: 380-72799-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
8015B GRO LL	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	EET CAL 4
8015B	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	EET CAL 4
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
525.2	Extraction of Semivolatile Compounds	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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806

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

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

# Sample Summary

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

Job ID: 380-72799-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-72799-1	MOANALUA WELLS	Drinking Water	11/27/23 10:28	11/29/23 09:46	HI0000331
380-72799-2	AIEA GULCH WELLS PUMP2	Drinking Water	11/27/23 11:33	11/29/23 09:46	HI0000331
380-72799-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	11/27/23 11:57	11/29/23 09:46	HI0000331
380-72799-4	HALAWA WELLS UNITS 1&2 P1	Drinking Water	11/27/23 11:00	11/29/23 09:46	HI0000331
380-72799-5	TB MOANALUA WELLS	Water	11/27/23 10:28	11/29/23 09:46	HI0000331
380-72799-6	TB AIEA GULCH WELLS PUMP2	Water	11/27/23 11:33	11/29/23 09:46	HI0000331
380-72799-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Water	11/27/23 11:57	11/29/23 09:46	HI0000331
380-72799-8	TB HALAWA WELLS UNITS 1&2 P1	Water	11/27/23 11:00	11/29/23 09:46	HI0000331
380-72799-9	FB MOANALUA WELLS	Water	11/27/23 10:28	11/29/23 09:46	HI0000331
380-72799-10	FB AIEA GULCH WELLS PUMP2	Water	11/27/23 11:33	11/29/23 09:46	HI0000331
380-72799-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	11/27/23 11:57	11/29/23 09:46	HI0000331
380-72799-12	FB HALAWA WELLS UNITS 1&2 P1	Water	11/27/23 11:00	11/29/23 09:46	HI0000331



December 27, 2023

Rachelle Arada  
 Eurofins Eaton Analytical  
 750 Royal Oaks Drive  
 Suite 100  
 Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-72799-1  
 Physis Project ID: 1407003-463

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 11/30/2023. A total of 4 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Organics
Polynuclear Aromatic Hydrocarbons by EPA 625.1
Disalicylidenepropanediamine by EPA 625.1
Dibenzo [a,l] Pyrene w/ PAHs by EPA 625.1

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Rachel Hansen  
 714 602-5320  
 Extension 203  
 rachelhansen@physislabs.com

## PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-463

RED-HILL Project # 38001111 Job # 380-72799-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
113197	MOANALUA WELLS	380-72799-1	11/27/202	10:28	Samplewater	Not Specified
113198	AIEA GULCH WELLS PUMP 2	380-72799-2	11/27/202	11:33	Samplewater	Not Specified
113199	AIEA WELLS PUMPS 1&2 (260)	380-72799-3	11/27/202	11:57	Samplewater	Not Specified
113200	HALAWA WELLS UNITS 1 & 2 P1	380-72799-4	11/27/202	11:00	Samplewater	Not Specified

## ABBREVIATIONS and ACRONYMS

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight

## QUALITY ASSURANCE SUMMARY

**LABORATORY BATCH:** Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

**PROCEDURAL BLANK:** Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

**ACCURACY:** Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

**PRECISION:** Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS<sub>1</sub>/MS<sub>2</sub>, BS<sub>1</sub>/BS<sub>2</sub>, LCS<sub>1</sub>/LCS<sub>2</sub>, LCM<sub>1</sub>/LCM<sub>2</sub>, CRM<sub>1</sub>/CRM<sub>2</sub>, surrogate spikes and/or replicate project sample analysis (R<sub>1</sub>/R<sub>2</sub>) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

**BLANK SPIKES:** BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

**MATRIX SPIKES:** MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

**CERTIFIED REFERENCE MATERIALS:** CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

**LABORATORY CONTROL MATERIAL:** LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

**LABORATORY CONTROL SPIKES:** LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

**SURROGATES:** A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to



the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

**HOLDING TIME:** Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes.

**SAMPLE STORAGE/RETENTION:** In order to maintain chemical integrity prior to analysis, all samples submitted to Physis are refrigerated (liquids) or frozen (solids) upon receipt unless otherwise recommended by applicable methods. Solid samples are retained for 1 year from collection while liquid samples are retained until method recommended holding times elapse.

**TOTAL/DISSOLVED FRACTION:** In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.

## PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	analyte was detected in the procedural blank greater than 10 times the MDL
E	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
H	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified accuracy and/or precision acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore accuracy and/or precision acceptance limits do not apply
SL	analyte results were lower than 10 times the MDL, therefore accuracy and/or precision acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore accuracy and/or precision acceptance limits do not apply
Q	analyte was outside the specified QAPP acceptance limits for precision and/or accuracy but within Physis derived acceptance limits, therefore the sample data was reported without further clarification
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

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## CASE NARRATIVE

### QUALIFIER NOTES

In addition to the use of analyte specific Physis Qualifier Codes where applicable, the following were also noted.

#### **ND**

MDL is listed due to report format restrictions; it is not used in reporting. Analytical results reported are ND at the RL.

# ANALYTICAL REPORT

TERRA AURA ENVIRONMENTAL LABORATORIES, INC.

*Innovative Solutions for Nature*

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## Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 113197-R1 MOANALUA WELLS 380-72799-1 Matrix: Samplewater</b>											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44034	04-Dec-23	24-Dec-23
<b>Sample ID: 113198-R1 AIEA GULCH WELLS PUMP 2 380-7 Matrix: Samplewater</b>											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44034	04-Dec-23	24-Dec-23
<b>Sample ID: 113199-R1 AIEA WELLS PUMPS 1&amp;2 (260) 380- Matrix: Samplewater</b>											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44034	04-Dec-23	24-Dec-23
<b>Sample ID: 113200-R1 HALAWA WELLS UNITS 1 &amp; 2 P1 38 Matrix: Samplewater</b>											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44034	04-Dec-23	24-Dec-23

## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 113197-R1</b>	<b>MOANALUA WELLS 380-72799-1</b>	<b>Matrix: Samplewater</b>					<b>Sampled: 27-Nov-23 10:28</b>			<b>Received: 30-Nov-23</b>	
(d10-Acenaphthene)	EPA 625.1	% Recovery	85	1			Total		O-44034	04-Dec-23	24-Dec-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	90	1			Total		O-44034	04-Dec-23	24-Dec-23
(d12-Chrysene)	EPA 625.1	% Recovery	103	1			Total		O-44034	04-Dec-23	24-Dec-23
(d12-Perylene)	EPA 625.1	% Recovery	101	1			Total		O-44034	04-Dec-23	24-Dec-23
(d8-Naphthalene)	EPA 625.1	% Recovery	92	1			Total		O-44034	04-Dec-23	24-Dec-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23

## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23



## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 113198-R1</b>	<b>AIEA GULCH WELLS PUMP 2 380-7 Matrix: Samplewater</b>						<b>Sampled: 27-Nov-23 11:33</b>		<b>Received: 30-Nov-23</b>		
(d10-Acenaphthene)	EPA 625.1	% Recovery	68	1			Total		O-44034	04-Dec-23	24-Dec-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	79	1			Total		O-44034	04-Dec-23	24-Dec-23
(d12-Chrysene)	EPA 625.1	% Recovery	87	1			Total		O-44034	04-Dec-23	24-Dec-23
(d12-Perylene)	EPA 625.1	% Recovery	101	1			Total		O-44034	04-Dec-23	24-Dec-23
(d8-Naphthalene)	EPA 625.1	% Recovery	69	1			Total		O-44034	04-Dec-23	24-Dec-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23



## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23

## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
<b>Sample ID: 113199-R1</b>	<b>AIEA WELLS PUMPS 1&amp;2 (260) 380- Matrix: Samplewater</b>						<b>Sampled:</b>	<b>27-Nov-23 11:57</b>	<b>Received:</b>	<b>30-Nov-23</b>		
(d10-Acenaphthene)	EPA 625.1	% Recovery	57	1			Total		O-44034	04-Dec-23	24-Dec-23	
(d10-Phenanthrene)	EPA 625.1	% Recovery	61	1			Total		O-44034	04-Dec-23	24-Dec-23	
(d12-Chrysene)	EPA 625.1	% Recovery	78	1			Total		O-44034	04-Dec-23	24-Dec-23	
(d12-Perylene)	EPA 625.1	% Recovery	98	1			Total		O-44034	04-Dec-23	24-Dec-23	
(d8-Naphthalene)	EPA 625.1	% Recovery	57	1			Total		O-44034	04-Dec-23	24-Dec-23	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23	

### Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23



## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 113200-R1</b>	<b>HALAWA WELLS UNITS 1 &amp; 2 P1 38 Matrix: Samplewater</b>						<b>Sampled: 27-Nov-23 11:00</b>		<b>Received: 30-Nov-23</b>		
(d10-Acenaphthene)	EPA 625.1	% Recovery	82	1			Total		O-44034	04-Dec-23	24-Dec-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	91	1			Total		O-44034	04-Dec-23	24-Dec-23
(d12-Chrysene)	EPA 625.1	% Recovery	89	1			Total		O-44034	04-Dec-23	24-Dec-23
(d12-Perylene)	EPA 625.1	% Recovery	103	1			Total		O-44034	04-Dec-23	24-Dec-23
(d8-Naphthalene)	EPA 625.1	% Recovery	86	1			Total		O-44034	04-Dec-23	24-Dec-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23

## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44034	04-Dec-23	24-Dec-23



# QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

*Innovative Solutions for Nature*

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## Base/Neutral Extractable Compounds

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
<b>Sample ID: 113196-B1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-44034			Prepared: 04-Dec-23		Analyzed: 24-Dec-23			
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L							
<b>Sample ID: 113196-BS1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-44034			Prepared: 04-Dec-23		Analyzed: 24-Dec-23			
Disalicylidenepropanediamin	Total	63.7	1	0.05	0.1	µg/L	50	0	127	50 - 150%	PASS		
<b>Sample ID: 113196-BS2</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-44034			Prepared: 04-Dec-23		Analyzed: 24-Dec-23			
Disalicylidenepropanediamin	Total	74.3	1	0.05	0.1	µg/L	50	0	149	50 - 150%	PASS	16	30 PASS

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
<b>Sample ID: 113196-B1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>		<b>Sampled:</b>		<b>Received:</b>		
		Method: EPA 625.1				Batch ID: O-44034	Prepared: 04-Dec-23		Analyzed: 24-Dec-23		
(d10-Acenaphthene)	Total	80	1			% Recovery	100	80	27 - 133%	PASS	
(d10-Phenanthrene)	Total	87	1			% Recovery	100	87	43 - 129%	PASS	
(d12-Chrysene)	Total	100	1			% Recovery	100	100	52 - 144%	PASS	
(d12-Perylene)	Total	108	1			% Recovery	100	108	36 - 161%	PASS	
(d8-Naphthalene)	Total	102	1			% Recovery	100	102	25 - 125%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L					
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L					
Anthracene	Total	ND	1	0.001	0.005	µg/L					
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L					
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L					
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Biphenyl	Total	ND	1	0.001	0.005	µg/L					
Chrysene	Total	ND	1	0.001	0.005	µg/L					
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L					
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L					



## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L							
Fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Fluorene	Total	ND	1	0.001	0.005	µg/L							
Indeno[1,2,3-cd]pyrene	Total	ND	1	0.001	0.005	µg/L							
Naphthalene	Total	ND	1	0.001	0.005	µg/L							
Perylene	Total	ND	1	0.001	0.005	µg/L							
Phenanthrene	Total	ND	1	0.001	0.005	µg/L							
Pyrene	Total	ND	1	0.001	0.005	µg/L							



## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION	QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS
<b>Sample ID: 113196-BS1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>		
Method: EPA 625.1		Batch ID: O-44034			Prepared: 04-Dec-23		Analyzed: 24-Dec-23					
(d10-Acenaphthene)	Total	90	1			% Recovery	100	0	90	27 - 133%	PASS	
(d10-Phenanthrene)	Total	104	1			% Recovery	100	0	104	43 - 129%	PASS	
(d12-Chrysene)	Total	96	1			% Recovery	100	0	96	52 - 144%	PASS	
(d12-Perylene)	Total	106	1			% Recovery	100	0	106	36 - 161%	PASS	
(d8-Naphthalene)	Total	94	1			% Recovery	100	0	94	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.455	1	0.001	0.005	µg/L	0.5	0	91	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.504	1	0.001	0.005	µg/L	0.5	0	101	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.444	1	0.001	0.005	µg/L	0.5	0	89	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.434	1	0.001	0.005	µg/L	0.5	0	87	47 - 130%	PASS	
Acenaphthene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	53 - 131%	PASS	
Acenaphthylene	Total	0.436	1	0.001	0.005	µg/L	0.5	0	87	43 - 140%	PASS	
Anthracene	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	58 - 135%	PASS	
Benz[a]anthracene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.515	1	0.001	0.005	µg/L	0.5	0	103	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.477	1	0.001	0.005	µg/L	0.5	0	95	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.496	1	0.001	0.005	µg/L	0.5	0	99	56 - 145%	PASS	
Biphenyl	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	56 - 119%	PASS	
Chrysene	Total	0.501	1	0.001	0.005	µg/L	0.5	0	100	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.489	1	0.001	0.005	µg/L	0.5	0	98	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	50 - 150%	PASS	

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	0.476	1	0.001	0.005	µg/L	0.5	0	95	46 - 126%	PASS		
Fluoranthene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	60 - 146%	PASS		
Fluorene	Total	0.486	1	0.001	0.005	µg/L	0.5	0	97	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.465	1	0.001	0.005	µg/L	0.5	0	93	50 - 151%	PASS		
Naphthalene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	41 - 126%	PASS		
Perylene	Total	0.445	1	0.001	0.005	µg/L	0.5	0	89	48 - 141%	PASS		
Phenanthrene	Total	0.479	1	0.001	0.005	µg/L	0.5	0	96	67 - 127%	PASS		
Pyrene	Total	0.508	1	0.001	0.005	µg/L	0.5	0	102	54 - 156%	PASS		



## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
<b>Sample ID: 113196-BS2</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>			<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-44034			Prepared: 04-Dec-23			Analyzed: 24-Dec-23			
(d10-Acenaphthene)	Total	86	1			% Recovery	100	0	86	27 - 133%	PASS	5	30	PASS
(d10-Phenanthrene)	Total	98	1			% Recovery	100	0	98	43 - 129%	PASS	6	30	PASS
(d12-Chrysene)	Total	99	1			% Recovery	100	0	99	52 - 144%	PASS	3	30	PASS
(d12-Perylene)	Total	108	1			% Recovery	100	0	108	36 - 161%	PASS	2	30	PASS
(d8-Naphthalene)	Total	89	1			% Recovery	100	0	89	25 - 125%	PASS	5	30	PASS
1-Methylnaphthalene	Total	0.413	1	0.001	0.005	µg/L	0.5	0	83	31 - 128%	PASS	6	30	PASS
1-Methylphenanthrene	Total	0.417	1	0.001	0.005	µg/L	0.5	0	83	66 - 127%	PASS	9	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.457	1	0.001	0.005	µg/L	0.5	0	91	55 - 122%	PASS	10	30	PASS
2,6-Dimethylnaphthalene	Total	0.414	1	0.001	0.005	µg/L	0.5	0	83	48 - 120%	PASS	7	30	PASS
2-Methylnaphthalene	Total	0.416	1	0.001	0.005	µg/L	0.5	0	83	47 - 130%	PASS	5	30	PASS
Acenaphthene	Total	0.407	1	0.001	0.005	µg/L	0.5	0	81	53 - 131%	PASS	13	30	PASS
Acenaphthylene	Total	0.394	1	0.001	0.005	µg/L	0.5	0	79	43 - 140%	PASS	10	30	PASS
Anthracene	Total	0.499	1	0.001	0.005	µg/L	0.5	0	100	58 - 135%	PASS	0	30	PASS
Benz[a]anthracene	Total	0.433	1	0.001	0.005	µg/L	0.5	0	87	55 - 145%	PASS	1	30	PASS
Benzo[a]pyrene	Total	0.476	1	0.001	0.005	µg/L	0.5	0	95	51 - 143%	PASS	8	30	PASS
Benzo[b]fluoranthene	Total	0.479	1	0.001	0.005	µg/L	0.5	0	96	46 - 165%	PASS	2	30	PASS
Benzo[e]pyrene	Total	0.438	1	0.001	0.005	µg/L	0.5	0	88	42 - 152%	PASS	10	30	PASS
Benzo[g,h,i]perylene	Total	0.537	1	0.001	0.005	µg/L	0.5	0	107	63 - 133%	PASS	12	30	PASS
Benzo[k]fluoranthene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	56 - 145%	PASS	3	30	PASS
Biphenyl	Total	0.432	1	0.001	0.005	µg/L	0.5	0	86	56 - 119%	PASS	5	30	PASS
Chrysene	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	56 - 141%	PASS	0	30	PASS
Dibenz[a,h]anthracene	Total	0.514	1	0.001	0.005	µg/L	0.5	0	103	55 - 150%	PASS	5	30	PASS
Dibenzo[a,l]pyrene	Total	0.472	1	0.001	0.005	µg/L	0.5	0	94	50 - 150%	PASS	4	30	PASS

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Dibenzothiophene	Total	0.45	1	0.001	0.005	µg/L	0.5	0	90	46 - 126%	PASS	5	30	PASS
Fluoranthene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	60 - 146%	PASS	14	30	PASS
Fluorene	Total	0.463	1	0.001	0.005	µg/L	0.5	0	93	58 - 131%	PASS	4	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	50 - 151%	PASS	6	30	PASS
Naphthalene	Total	0.43	1	0.001	0.005	µg/L	0.5	0	86	41 - 126%	PASS	5	30	PASS
Perylene	Total	0.413	1	0.001	0.005	µg/L	0.5	0	83	48 - 141%	PASS	7	30	PASS
Phenanthrene	Total	0.43	1	0.001	0.005	µg/L	0.5	0	86	67 - 127%	PASS	11	30	PASS
Pyrene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	54 - 156%	PASS	12	30	PASS

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**PHYSIS**  
**TENTATIVELY**  
**IDENTIFIED COMPOUNDS**  
ENVIRONMENTAL LABORATORIES, INC.  
*Innovative Solutions for Nature*

Sample ID: 113197

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.9354	1.4523	1111	Anthracene-D10-	1719-06-8	89
11.6634	2.5679	1965	Cyclopropane, 2-chloro-1,1,3-trimethyl-	98485-99-5	81
11.0832	2.1752	1664	2-(Chloromethyl)tetrahydropyran	18420-41-2	82
10.8539	1.5395	1178	2H-Pyran-2-methanol, tetrahydro-	100-72-1	82
10.8538	1.0066	770	N-Vinylacetamide	5202-78-8	81
11.9314	0.7206	551	Octane, 4,5-diethyl-	1636-41-5	94
12.7657	0.6576	503	Cyclooctane, cyclohexyl-	92369-78-3	88
11.9310	0.6228	477	Heptane, 2,3-dimethyl-	3074-71-3	89
13.6060	0.4965	380	Cyclohexaneethanol	4442-79-9	81
13.1274	0.4855	371	(Z)-(Z)-Hex-3-en-1-yl 2-methylbut-2-enoate	84060-80-0	89
12.1862	0.3787	290	Decane, 5,6-dimethyl-	1636-43-7	90
12.9093	0.3546	271	Cyclopentane, 1-methyl-2-(2-propenyl)-, trans-	50746-53-7	82
12.9092	0.3098	237	Cyclohexane, octyl-	1795-15-9	82
29.5939	0.1923	147	Benzoic acid, 2-ethylhexyl ester	5444-75-7	83
12.1388	0.1580	121	Hexane, 2,3,5-trimethyl-	1069-53-0	94

Concentration estimated using the response for Anthracene-d10

Sample ID: 113198

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.5356	1.1259	1111	Anthracene-D10-	1719-06-8	92
66.3618	4.9943	4929	Supraene	7683-64-9	90
11.6611	1.7329	1710	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	82
11.0819	1.3176	1300	Hexane, 2-nitro-	14255-44-8	85
10.8501	1.1210	1106	2-(Chloromethyl)tetrahydropyran	18420-41-2	82
12.7710	0.6548	646	Cyclooctane, cyclohexyl-	92369-78-3	91
10.1395	0.5969	589	Furan, 2,3-dihydro-	1191-99-7	81
13.1238	0.4809	475	Cyclohexane, octyl-	1795-15-9	88
15.9349	0.4751	469	1,3-Dioxolane	646-06-0	91
12.6195	0.3120	308	Cyclohexane, 3-ethyl-5-methyl-1-propyl-	1000151-39-5	84
13.6048	0.2583	255	Betazole	105-20-4	81
13.6048	0.2379	235	1H-Imidazole, 1-methyl-	616-47-7	83
11.9335	0.2177	215	Piperazine, 1,4-dinitro-	4164-37-8	87
29.5756	0.1457	144	Benzoic acid, 2-ethylhexyl ester	5444-75-7	80
12.1846	0.1321	130	Decane, 5,6-dimethyl-	1636-43-7	82
12.7398	0.1304	129	3,3'-Bifuran, 2,2',3,3'-tetrahydro-	98869-94-4	85
29.5760	0.1056	104	Phenylglyoxylic acid, butyl ester	1000453-46-6	82
14.3811	0.1000	99	Betazole	105-20-4	81

Concentration estimated using the response for Anthracene-d10



Sample ID: 113199

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.9498	2.1517	1111	Anthracene-D10	1517-22-2	83
11.6622	2.2548	1164	2,6-Octadiene, 2,4-dimethyl-	63843-03-8	81
11.0824	1.9163	990	2-(Chloromethyl)tetrahydropyran	18420-41-2	83
10.8515	1.4883	769	2-(Chloromethyl)tetrahydropyran	18420-41-2	81
11.9417	0.8967	463	Octane, 4,5-diethyl-	1636-41-5	81
12.7667	0.6601	341	Cyclooctane, cyclohexyl-	92369-78-3	87
12.7667	0.6334	327	1,1'-Bicyclooctyl	6708-17-4	82
13.1253	0.4912	254	Cyclohexane, octyl-	1795-15-9	86
11.9323	0.4371	226	2-Oxepanone, 7-methyl-	2549-59-9	82
13.6066	0.3687	190	3,4-Nonadiene	37050-03-6	81
12.1393	0.3154	163	Decane, 5,6-dimethyl-	1636-43-7	82
12.9098	0.2869	148	Acetic acid, trifluoro-, cyclohexyl ester	1549-45-7	83
12.6204	0.2786	144	Cyclohexane, 3-ethyl-5-methyl-1-propyl-	1000151-39-5	82
12.9098	0.2732	141	2-Heptene, 5-ethyl-2,4-dimethyl-	74421-06-0	85
29.5834	0.2047	106	Benzoic acid, 2-ethylhexyl ester	5444-75-7	83
12.7669	0.1167	60	1H-Pyrazol-4-amine, 3,5-dimethyl-	5272-86-6	81
17.8014	0.0593	31	Propanoic acid, 2-methyl-, 2-ethyl-3-hydroxyhexyl ester	74367-31-0	81
25.2887	0.0542	28	Phthalic acid, cyclobutyl ethyl ester	1000315-41-1	84
25.2900	0.0364	19	Phthalic acid, 4-bromophenyl ethyl ester	1000309-80-8	81
70.1837	0.0047	2	Pyrazolo[5,1-c]-as-triazine-3-carboxylic acid, 4-amino-, hydrazide	16111-78-7	82

Concentration estimated using the response for Anthracene-d10

Sample ID: 113200

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.9517	2.3016	1111	Anthracene-D10-	1719-06-8	95
11.6638	2.5871	1249	Cyclopropane, 2-chloro-1,1,3-trimethyl-	98485-99-5	83
11.0845	2.3847	1151	2-(Chloromethyl)tetrahydropyran	18420-41-2	83
10.8545	1.8421	889	2-[2-(5-Norbornenyl)oxy]-tetrahydropyran	122685-23-8	81
11.9464	0.6340	306	Nonane, 4-ethyl-5-methyl-	1632-71-9	93
12.7739	0.5683	274	Cyclohexane, (1,2-dimethylbutyl)-	61142-37-8	88
11.9301	0.4720	228	Octane, 4,5-diethyl-	1636-41-5	86
13.1255	0.4516	218	Cyclohexane, octyl-	1795-15-9	86
10.1556	0.3634	175	Methyl propargyl ether	627-41-8	84
29.5825	0.2707	131	Benzoic acid, 2-ethylhexyl ester	5444-75-7	82

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1\_44034

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.9544	1.8874	1111	Anthracene-D10-	1719-06-8	90
11.0880	2.4241	1427	2-(Chloromethyl)tetrahydropyran	18420-41-2	83
11.6681	2.0518	1208	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	81
10.8570	1.9191	1130	2-(Chloromethyl)tetrahydropyran	18420-41-2	83
13.1281	0.1496	88	Cyclohexane, octyl-	1795-15-9	85
11.9124	0.1436	85	Octane, 4,5-diethyl-	1636-41-5	83
11.9142	0.1370	81	Undecane, 4,4-dimethyl-	17312-68-4	83

Concentration estimated using the response for Anthracene-d10

# PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

*Innovative Solutions for Nature*

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**Eurofins Eaton Analytical Pomona**

941 Corporate Center Drive  
 Pomona, CA 91768-2642  
 Phone: 626-386-1100

**Chain of Custody Record**



Environment Testing

<b>Client Information (Sub Contract Lab)</b>	Sampler:	Lab P/N:	Carrier Tracking No(s):	COCC No:
Client Contact:	Arada, Rachelle	Arada, Rachelle	State of Origin:	380-92746-1
Shipping/Receiving:	Phone:	E-Mail:	Hawaii	Page: 1 of 1
Company:	Physis Environmental Laboratories	Rachelle.Arada@et.eurofins.com	Accreditations Required (See note):	Job #: 380-72799-1
Address:	1904 Wright Circle,	State - Hawaii		Preservation Codes:
City:	Anaheim			A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NH4SC4 F - MeOH G - Amchlor H - Ascorbic Acid I - Iae J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsHNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - PH 4-5 Y - Trizma Z - other (Specify)
Due Date Requested:	12/11/2023			
TAT Requested (days):				

Project Name:	RED-HILL	Project #:	38001111
Site:	Honolulu BWS Sites	SSOW#:	
State Zip:	CA, 92806	PO #:	
Phone:		WOC #:	
Email:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=seawater, B=brine, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Total Number of containers	Special Instructions/Note:
MOANALUA WELLS (380-72799-1)	11/27/23	10:28		Water	X	X	SUB (625 PAH Physis LL (EAL) + TICs) / 625 PAH Physis LL (EAL) + TICs	2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (380-72799-2)	11/27/23	11:33		Water	X	X		2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) P2 (380-72799-3)	11/27/23	11:57		Water	X	X		2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 P1 (380-72799-4)	11/27/23	11:00		Water	X	X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyze & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to Eurofins Eaton Analytical, LLC.

**Possible Hazard Identification**

Unconfirmed

Deliverable Requested: I, II, III, IV, Other (Specify) \_\_\_\_\_

Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>Van</i>	11/30/23	1334	
Relinquished by:	Date/Time:	Company:	Received by: <i>Steffen</i>
Relinquished by:	Date/Time:	Company:	Date/Time: 11/30/2023 13:34
Relinquished by:	Date/Time:	Company:	Received by: <i>Physis</i>
Relinquished by:	Date/Time:	Company:	Date/Time:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Received by:	Cooler Temperature(s) °C and Other Remarks:

Project Iteration ID: 1407003-463  
 Client Name: Eurofins Eaton Analytical  
 Project Name: RED-HILL Project # 38001111 Job # 380-72799-1  
 COC Page Number: 2 of 2  
 Bottle Label Color: NA

**Sample Receipt Summary**

**Receiving Info**

1. Initials Received By: BH
2. Date Received: 11/30/23
3. Time Received: 13:34
4. Client Name: Eurofins
5. Courier Information: (Please circle)
  - Client
    - UPS
    - Area Fast
    - DRS
  - FedEx
    - GSO/GLS
    - Ontrac
    - PAMS
  - PHYSIS Driver:
    - i. Start Time: \_\_\_\_\_
    - ii. End Time: \_\_\_\_\_
    - iii. Total Mileage: \_\_\_\_\_
    - iv. Number of Pickups: \_\_\_\_\_
6. Container Information: (Please put the # of containers or circle none)
  - 1 Cooler
  - \_\_\_ Styrofoam Cooler
  - \_\_\_ Boxes
  - None
  - \_\_\_ Carboy(s)
  - \_\_\_ Carboy Trash Can(s)
  - \_\_\_ Carboy Cap(s)
  - Other \_\_\_\_\_
7. What type of ice was used: (Please circle any that apply)
  - Wet Ice
  - Blue Ice
  - Dry Ice
  - Water
  - None
8. Randomly Selected Samples Temperature (°C): 3.7  
 Used I/R Thermometer # 1-2

**Inspection Info**

1. Initials Inspected By: RGH

**Sample Integrity Upon Receipt:**

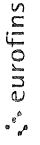
1. COC(s) included and completely filled out.....  Yes / No
2. All sample containers arrived intact.....  Yes / No
3. All samples listed on COC(s) are present.....  Yes / No
4. Information on containers consistent with information on COC(s).....  Yes / No
5. Correct containers and volume for all analyses indicated.....  Yes / No
6. All samples received within method holding time.....  Yes / No
7. Correct preservation used for all analyses indicated.....  Yes / No
8. Name of sampler included on COC(s)..... Yes /  No

Notes:



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

**Chain of Custody Record**



Environmental Services

<b>Client Information</b>		SAMPLER: BAILEY		Lab PM: Arada, Rachelle		Camer Tracking No(s): 380-27941-2757 2	
Client Contact: Dr. Ron Fenstermacher		Phone: 808-748-5840		E-Mail: Rachelle.Arada@et.euronisus.com		Page: Page 2 of 2	
City & Country of Honolulu		PWSID		State of Origin		Job #	
Address: 630 South Beretania Street, Chemistry Lab		Due Date Requested		Analysis Requested		Preservation Codes:	
City: Honolulu		TAT Requested (days)		Perform MS/MSD (Yes or No)		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
State Zip: HI, 96843		Compliance Project: Δ No		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Phone: 808-748-5091 (tel)		PO #: C20525101 exp 05312023		SUBCONTRACT - (MOD) 526plus PLUS TICs		Total Number of Containers	
Email: rfenstermacher@hbws.org		WO #		SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil		Special Instructions/Note:	
Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill		Sample Date		SUBCONTRACT - 825 PAH Physis LL (EAL) + TICs		chlorinated	
Site: SSOW#		Sample Time		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		chlorinated	
Sample Identification		Sample Type (C=comp, G=grab)		RA		Y	
MOANALUA WELLS		G		RA		N	
AIEA GULCH WELLS PUMP2		G		RA		3	
AIEA WELLS PUMPS 1&2 (260) P2		G		RA		3	
HALAWA WELLS UNITS 1&2 P1		G		RA		3	
FB MOANALUA WELLS		G		RA		1	
FB AIEA GULCH WELLS PUMP2		G		RA		1	
FB AIEA WELLS PUMPS 1&2 (260)		G		RA		1	
FB HALAWA WELLS UNITS 1&2		G		RA		1	
Possible Hazard Identification		Matrix (W=water, S=solid, O=soil, BT=Tissue, A=AL)		Field Filtered Sample (Yes or No)		533 - All Analytes	
<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		Preservation Code		537 1 DW_PREC - 537 1 Full List		533 - All Analytes	
Deliverable Requested I, II, III, IV, Other (specify)		Sample Date		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Empty Kit Relinquished by		Sample Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Relinquished by BAILEY		Sample Date		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Relinquished by		Sample Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Relinquished by		Sample Date		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Custody Seals Intact. Δ Yes Δ No		Date		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Custody Seal No		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Relinquished by BAILEY		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Relinquished by		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Relinquished by		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Special Disposal (A fee may be assessed if samples are retained longer than 1 month)		Date		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Date		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Special Instructions/QC Requirements		Date		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Method of Shipment: FEDEX		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
① 7742 6814 3442		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
② 7742 6814 3443		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Received by G REINER		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Received by		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Received by		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
Cooler Temperature(s) °C and Other Remarks		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	
(757A) 0.21-0.1-2 0- (2) 2 1-0.1-2 0- GEL-FROZEN		Date/Time		526 2_PREC - (MOD) 526plus PLUS TICs		533 - All Analytes	





**Eurofins Eaton Analytical Pomona**

941 Corporate Center Drive  
 Pomona, CA 91768-2642  
 Phone: 626-386-1100

**Chain of Custody Record**



eurofins

Enviro

Loc: 380  
**72799**

<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-92736.1			
Client Contact: Shipping/Receiving		Phone:		E-Mail: Rachele.Arada@et.eurofinsus.com		State of Origin: Hawaii		Page: Page 1 of 1			
Company: Eurofins Environment Testing Southwest,				Accreditations Required (See note): State - Hawaii				Job #: 380-72799-1			
Address: 2841 Dow Avenue, Suite 100,		Due Date Requested: 12/19/2023		<b>Analysis Requested</b>						<b>Preservation Codes:</b> A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)	
City: Tustin		TAT Requested (days):									
State, Zip: CA, 92780		PO #:									
Phone: 714-895-5494(Tel)		WO #:									
Email:											
Project Name: RED-HILL		Project #: 38001111		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers			
Site: Honolulu BWS Sites		SSOW#:		8015B_GRO_LLJ5030C (MOD) GRO		8015B_DAV Ethanol					
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Special Instructions/Note:	
										Preservation Code:	
MOANALUA WELLS (380-72799-1)		11/27/23		10:28 Hawaiian		Water		Water		6 MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.	
AIEA GULCH WELLS PUMP 2 (380-72799-2)		11/27/23		11:33 Hawaiian		Water		Water		6 MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.	
AIEA WELLS PUMPS 1&2 (260) P2 (380-72799-3)		11/27/23		11:57 Hawaiian		Water		Water		6 MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.	
HALAWA WELLS UNITS 1 & 2 P1 (380-72799-4)		11/27/23		11:00 Hawaiian		Water		Water		6 MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.	
TB MOANALUA WELLS (380-72799-5)		11/27/23		10:28 Hawaiian		Water		Water		2 MRLs are needed.	
TB AIEA GULCH WELLS PUMP 2 (380-72799-6)		11/27/23		11:33 Hawaiian		Water		Water		2 MRLs are needed.	
TB AIEA WELLS PUMPS 1&2 (260) P2 (380-72799-7)		11/27/23		11:57 Hawaiian		Water		Water		2 MRLs are needed.	
TB HALAWA WELLS UNITS 1 & 2 P1 (380-72799-8)		11/27/23		11:00 Hawaiian		Water		Water		2 MRLs are needed.	
Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.											
<b>Possible Hazard Identification</b>						<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>					
Unconfirmed						<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)				Primary Deliverable Rank: 2		Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: <i>Xm</i>		Date/Time: <i>11/30/23 14:05</i>		Company: <i>ETA</i>		Received by: <i>W</i>		Date/Time: <i>11/30/23 14:05</i>		Company: <i>RC</i>	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks: <i>2:2/e-1 Sol2</i>					

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-72799-1

**Login Number: 72799**  
**List Number: 1**  
**Creator: Elyas, Matthew**

**List Source: Eurofins Eaton Analytical Pomona**

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and 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	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-72799-1

**Login Number: 72799**  
**List Number: 2**  
**Creator: Khana, Piyush**

**List Source: Eurofins Calscience**  
**List Creation: 11/30/23 05:49 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
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	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	