BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU

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July 8, 2024

Ms. Martha Guzman
Regional Administrator
US Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

And

Dr. Kenneth S. Fink, M.D.
Director
State of Hawai'i
Department of Health
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

Dear Ms. Guzman and Dr. Fink:

Subject: Polynuclear Aromatic Hydrocarbons (PAHs)
Detected at Board of Water Supply 'Aiea Wells

The Board of Water Supply (BWS) would like to inform the United States Environmental Protection Agency (EPA) and Hawai'i Department of Health (DOH) (collectively referred to as the "Regulatory Agencies") that we have detected polycyclic aromatic hydrocarbons (PAHs) at the BWS 'Aiea Wells in water samples collected on 5/13/24 and 6/4/24 using EPA Methods 525.2 and 625. The findings are summarized in the tables below, which include sample results collected before and after these dates for comparison purposes.

All values in µg/L		**EPA 525.2 EEA 380-95827-1**		**EPA 625 EEA 380-95821-1**	
Analyte	**Sample Date**	**Result**	**MRL***	**Result**	**MRL***
1-Methylphenanthrene	5/13/24	<0.097	0.097	<0.005	0.005
Anthracene	5/13/24	<0.019	0.019	<0.005	0.005
Benz[a]anthracene	5/13/24	<0.048	0.048	0.0077	0.005
Benzo[a]pyrene	5/13/24	<0.019	0.019	<0.005	0.005
Benzo[b]fluoranthene	5/13/24	<0.019	0.019	0.0104	0.005
Benzo[e]pyrene	5/13/24	NA	NA	<0.005	0.005
Benzo[g,h,i]perylene	5/13/24	<0.048	0.048	<0.005	0.005

Benzo[k]fluoranthene	5/13/24	<0.019	0.019	0.00546	0.005
Chrysene	5/13/24	<0.019	0.019	0.00677	0.005
Dibenz[a,h]anthracene	5/13/24	<0.048	0.048	<0.005	0.005
Dibenzo[a,l]pyrene	5/13/24	NA	NA	<0.005	0.005
Fluoranthene	5/13/24	<0.097	0.097	0.00841	0.005
Indeno[1,2,3-cd] pyrene	5/13/24	<0.048	0.048	<0.005	0.005
Perylene	5/13/24	NA	NA	<0.005	0.005
Phenanthrene	5/13/24	<0.039	0.039	<0.005	0.005
Pyrene	5/13/24	<0.048	0.048	0.00978	0.005

*Minimum reporting limit
NA = Not available

The results of samples collected before and after 5/13/24 no PAH detections by EPA 525.2 and EPA 625.

Sample Date	EEA Lab Report	PAH Results by EPA 625	EEA Lab Report	PAH Results by EPA 525.2
5/7/24	380-95026	Not detected	380-95033	Not detected
5/20/24	380-96896	Not detected	380-96902	Not detected

Samples from BWS 'Aiea Wells collected on 6/4/24 and tested using EPA 525.2 and EPA 625 also showed PAH detections and are presented below.

All values in µg/L		**EPA 525.2 EEA 380-98637-1**		**EPA 625 EEA 380-98637-2**	
Analyte	**Sample Date**	**Result**	**MRL***	**Result**	**MRL***
1-Methylphenanthrene	6/4/24	<0.098	0.098	0.0113	0.005
Anthracene	6/4/24	<0.020	0.020	0.00852	0.005
Benz[a]anthracene	6/4/24	0.20	0.049	0.27	0.005
Benzo[a]pyrene	6/4/24	0.13	0.020	0.0999	0.005
Benzo[b]fluoranthene	6/4/24	0.19	0.020	0.213	0.005
Benzo[e]pyrene	6/4/24	NA	NA	0.0857	0.005
Benzo[g,h,i]perylene	6/4/24	<0.049	0.049	0.0489	0.005
Benzo[k]fluoranthene	6/4/24	0.077	0.020	0.189	0.005
Chrysene	6/4/24	0.11	0.020	0.199	0.005
Dibenz[a,h]anthracene	6/4/24	<0.049	0.049	0.0269	0.005
Dibenzo[a,l]pyrene	6/4/24	NA	NA	0.0172	0.005
Fluoranthene	6/4/24	0.33	0.098	0.324	0.005
Indeno[1,2,3-cd] pyrene	6/4/24	<0.049	0.049	0.0786	0.005
Perylene	6/4/24	NA	NA	0.0361	0.005
Phenanthrene	6/4/24	<0.039	0.039	0.0231	0.005
Pyrene	6/4/24	0.31	0.049	0.356	0.005

*Minimum reporting limit
NA = Not available

The EEA 380-98637-2 report also recorded 0.0182 µg/L of Benzo[g,h,i]perylene at Hālawa Wells.

Samples collected before and after 6/4/24 showed no PAH detections by EPA 525.2 and EPA 625.

Sample Date	EEA Lab Report	PAH Results by EPA 625	EEA Lab Report	PAH Results by EPA 525.2
5/29/24	380-97851-2	Not detected	380-97851-1	Not detected
6/12/24	380-99954	Report pending	380-99971	Not detected

The laboratory reports for the samples discussed herein are enclosed for your review.

The BWS stopped pumping 'Aiea Wells on December 8, 2021, soon after the Red Hill Shaft contamination incident on November 20, 2021. The PAHs detections at BWS 'Aiea Wells are the first time that BWS has observed PAHs in this well.

These PAHs results may indicate a contaminant plume moving through the aquifer in the area of the BWS 'Aiea Wells in late May and early June 2024. The 5/13/24 samples may have recorded the leading edge of the plume with the main body passing the well in the 6/4/24 sample as indicated by the higher concentrations and more diverse types of PAHs compared to the results of the 5/13/24 sample. The absence of PAHs in the samples collected after these dates may represent the plume moving past the well by this time. Given the occurrence of PAHs in crude oil, we believe the contamination may be related to the November 2021 petroleum fuel release into Red Hill Shaft and/or past fuel releases from the Red Hill Bulk Fuel Storage Facility. The results also indicate that contaminants can move in the aquifer with the groundwater flow under static pumping conditions and can appear without warning in unpredictable amounts. This unpredictability makes the sizing and design of any contaminant removal treatment system technically challenging and potentially cost prohibitive.

We believe these results affirm the necessity of the BWS' decision to shut down Hālawa Shaft, Hālawa Wells and 'Aiea Wells in response to the November 2021 Joint Base Pearl Harbor Hickam (JBPHH) fuel contamination crisis. It also reaffirms BWS' repeated request to fully and expeditiously characterize and understand the impact of past fuel releases on the groundwater aquifer underlying the Red Hill facility. The BWS will not allow our customers and water system to be exposed to fuel contamination appearing in our water without warning in amounts that could be highly variable and unpredictable.

We urge the Regulatory Agencies to require the Navy expedite characterizing the nature and extent of the fuel contamination in the aquifer, complete the numerical groundwater flow model and the fate and transport study and mitigate the contamination in the aquifer.

If you have any questions, please contact Erwin Kawata, Deputy Manager, at 808-748-5066.

Very truly yours,

ERNEST Y.W. LAU, P.E.
Manager and Chief Engineer

Enclosures

cc: Naalehu Anthony, Board Chair
Board of Water Supply

Rear Admiral Stephen Barnett
Commander
Navy Region Hawai'i
850 Ticonderoga Street, Suite 110
JBPHH, Hawai'i 96860-5101

Kathleen Ho
Deputy Director
Environmental Health Administration
State of Hawai'i, Department of Health
1250 Punchbowl Street
Honolulu, Hawai'i 96813

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 6/13/2024 10:32:18 AM

JOB DESCRIPTION

RED-HILL
525.2
RUSH Weekly Red Hill

JOB NUMBER

380-98637-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

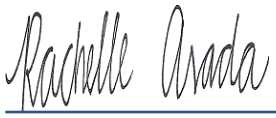
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-98637-1
SDG: 525.2

Qualifiers

GC/MS 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.

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.

Glossary

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

Job ID: 380-98637-1 — Eurofins Eaton Analytical Pomona

Job Narrative
380-98637-1

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 6/6/2024 10:02 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.0°C, 3.2°C and 3.7°C.

Receipt Exceptions
One or more containers for the following sample(s) was received broken or leaking: 1 of 3 received broken.

GC/MS Semi VOA
Method 525.2_PREC: One or more containers for the following sample(s) was received broken or leaking: 1 of 2 received broken.

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

Detection Summary

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

Job ID: 380-98637-1
SDG: 525.2

Client Sample ID: MOANALUA WELLS (331-223-TP202)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Dieldrin	0.022		0.0098		ug/L	1		525.2	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benz(a)anthracene	0.20		0.049		ug/L	1		525.2	Total/NA
Benzo[a]pyrene	0.13		0.020		ug/L	1		525.2	Total/NA
Benzo[b]fluoranthene	0.19		0.020		ug/L	1		525.2	Total/NA
Benzo[k]fluoranthene	0.077		0.020		ug/L	1		525.2	Total/NA
Chrysene	0.11		0.020		ug/L	1		525.2	Total/NA
Fluoranthene	0.33		0.098		ug/L	1		525.2	Total/NA
Pyrene	0.31		0.049		ug/L	1		525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Dieldrin	0.051		0.0097		ug/L	1		525.2	Total/NA
Heptachlor epoxide (isomer B)	0.015		0.0097		ug/L	1		525.2	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Date Collected: 06/04/24 11:21
Date Received: 06/06/24 10:02

Lab Sample ID: 380-98637-1

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	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
2,4'-DDD	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
2,4'-DDE	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
2,4'-DDT	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
2-Methylnaphthalene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
4,4'-DDD	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
4,4'-DDE	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
4,4'-DDT	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Acenaphthene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Acenaphthylene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Acetochlor	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Alachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
alpha-BHC	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
alpha-Chlordane	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Anthracene	<0.020		0.020		ug/L		06/07/24 15:05	06/10/24 14:44	1
Atrazine	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/07/24 15:05	06/10/24 14:44	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/07/24 15:05	06/10/24 14:44	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/07/24 15:05	06/10/24 14:44	1
beta-BHC	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/07/24 15:05	06/10/24 14:44	1
Bromacil	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Butachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/07/24 15:05	06/10/24 14:44	1
Chlorobenzilate	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Chloroneb	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Chlorpyrifos	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Chrysene	<0.020		0.020		ug/L		06/07/24 15:05	06/10/24 14:44	1
delta-BHC	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/07/24 15:05	06/10/24 14:44	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Dieldrin	**0.022**		0.0098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Diethylphthalate	<0.49		0.49		ug/L		06/07/24 15:05	06/10/24 14:44	1
Dimethylphthalate	<0.49		0.49		ug/L		06/07/24 15:05	06/10/24 14:44	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		06/07/24 15:05	06/10/24 14:44	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Endosulfan sulfate	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Endrin	<0.0098		0.0098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Endrin aldehyde	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
EPTC	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Fluoranthene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-98637-1
Date Collected: 06/04/24 11:21
Matrix: Drinking Water
Date Received: 06/06/24 10:02
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
gamma-Chlordane	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Heptachlor	<0.0098		0.0098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Heptachlor epoxide (isomer B)	<0.0098		0.0098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Isophorone	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Lindane	<0.0098		0.0098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Malathion	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Methoxychlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Metolachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Molinate	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Naphthalene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Parathion	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Phenanthrene	<0.039		0.039		ug/L		06/07/24 15:05	06/10/24 14:44	1
Propachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Pyrene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Simazine	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Terbacil	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Terbuthylazine	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Thiobencarb	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/07/24 15:05	06/10/24 14:44	1
trans-Nonachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 14:44	1
Trifluralin	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 14:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/07/24 15:05*	*06/10/24 14:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*105*		*70 - 130*	*06/07/24 15:05*	*06/10/24 14:44*	*1*
Perylene-d12	*96*		*70 - 130*	*06/07/24 15:05*	*06/10/24 14:44*	*1*
Triphenylphosphate	*103*		*70 - 130*	*06/07/24 15:05*	*06/10/24 14:44*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-98637-2
Date Collected: 06/04/24 12:00
Matrix: Drinking Water
Date Received: 06/06/24 10:02
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
2,4'-DDD	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
2,4'-DDE	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
2,4'-DDT	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
2-Methylnaphthalene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
4,4'-DDD	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1

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

Job ID: 380-98637-1
SDG: 525.2

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Date Collected: 06/04/24 12:00
Date Received: 06/06/24 10:02

Lab Sample ID: 380-98637-2
Matrix: Drinking Water
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'-DDE	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
4,4'-DDT	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Acenaphthene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Acenaphthylene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Acetochlor	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Alachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
alpha-BHC	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
alpha-Chlordane	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Anthracene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:04	1
Atrazine	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Benzo[a]pyrene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:04	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:04	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:04	1
beta-BHC	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		06/07/24 15:05	06/10/24 15:04	1
Bromacil	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Butachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/07/24 15:05	06/10/24 15:04	1
Chlorobenzilate	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Chloroneb	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Chlorpyrifos	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Chrysene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:04	1
delta-BHC	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		06/07/24 15:05	06/10/24 15:04	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Dieldrin	<0.0097		0.0097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Diethylphthalate	<0.49		0.49		ug/L		06/07/24 15:05	06/10/24 15:04	1
Dimethylphthalate	<0.49		0.49		ug/L		06/07/24 15:05	06/10/24 15:04	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		06/07/24 15:05	06/10/24 15:04	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Endosulfan sulfate	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Endrin	<0.0097		0.0097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Endrin aldehyde	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
EPTC	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Fluoranthene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Fluorene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
gamma-Chlordane	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Heptachlor	<0.0097		0.0097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Heptachlor epoxide (isomer B)	<0.0097		0.0097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-98637-2

Date Collected: 06/04/24 12:00
Date Received: 06/06/24 10:02

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Lindane	<0.0097		0.0097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Malathion	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Methoxychlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Metolachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Molinate	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Naphthalene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Parathion	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Phenanthrene	<0.039		0.039		ug/L		06/07/24 15:05	06/10/24 15:04	1
Propachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Pyrene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Simazine	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Terbacil	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Terbuthylazine	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Thiobencarb	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		06/07/24 15:05	06/10/24 15:04	1
trans-Nonachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:04	1
Trifluralin	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/07/24 15:05*	*06/10/24 15:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*101*		*70 - 130*	*06/07/24 15:05*	*06/10/24 15:04*	*1*
Perylene-d12	*98*		*70 - 130*	*06/07/24 15:05*	*06/10/24 15:04*	*1*
Triphenylphosphate	*99*		*70 - 130*	*06/07/24 15:05*	*06/10/24 15:04*	*1*

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-98637-3

Date Collected: 06/04/24 12:25
Date Received: 06/06/24 10:02

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	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
2,4'-DDD	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
2,4'-DDE	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
2,4'-DDT	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
2-Methylnaphthalene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
4,4'-DDD	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
4,4'-DDE	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
4,4'-DDT	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Acenaphthene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Acenaphthylene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Acetochlor	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Alachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1

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

Job ID: 380-98637-1
SDG: 525.2

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Date Collected: 06/04/24 12:25
Date Received: 06/06/24 10:02

Lab Sample ID: 380-98637-3
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
alpha-Chlordane	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Anthracene	<0.020		0.020		ug/L		06/07/24 15:05	06/10/24 15:24	1
Atrazine	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Benz(a)anthracene	**0.20**		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Benzo[a]pyrene	**0.13**		0.020		ug/L		06/07/24 15:05	06/10/24 15:24	1
Benzo[b]fluoranthene	**0.19**		0.020		ug/L		06/07/24 15:05	06/10/24 15:24	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Benzo[k]fluoranthene	**0.077**		0.020		ug/L		06/07/24 15:05	06/10/24 15:24	1
beta-BHC	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/07/24 15:05	06/10/24 15:24	1
Bromacil	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Butachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/07/24 15:05	06/10/24 15:24	1
Chlorobenzilate	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Chloroneb	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Chlorpyrifos	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Chrysene	**0.11**		0.020		ug/L		06/07/24 15:05	06/10/24 15:24	1
delta-BHC	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/07/24 15:05	06/10/24 15:24	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Dieldrin	<0.0098		0.0098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Diethylphthalate	<0.49		0.49		ug/L		06/07/24 15:05	06/10/24 15:24	1
Dimethylphthalate	<0.49		0.49		ug/L		06/07/24 15:05	06/10/24 15:24	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		06/07/24 15:05	06/10/24 15:24	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Endosulfan sulfate	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Endrin	<0.0098		0.0098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Endrin aldehyde	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
EPTC	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Fluoranthene	**0.33**		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Fluorene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
gamma-Chlordane	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Heptachlor	<0.0098		0.0098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Heptachlor epoxide (isomer B)	<0.0098		0.0098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Isophorone	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Lindane	<0.0098		0.0098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Malathion	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Methoxychlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Metolachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Molinate	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-98637-3

Date Collected: 06/04/24 12:25
Date Received: 06/06/24 10:02

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Parathion	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Phenanthrene	<0.039		0.039		ug/L		06/07/24 15:05	06/10/24 15:24	1
Propachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Pyrene	**0.31**		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Simazine	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Terbacil	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Terbuthylazine	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Thiobencarb	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 15:24	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/07/24 15:05	06/10/24 15:24	1
trans-Nonachlor	<0.049		0.049		ug/L		06/07/24 15:05	06/10/24 15:24	1
Trifluralin	<0.098		0.098		ug/L		06/07/24 15:05	06/10/24 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*	*06/07/24 15:05*	*06/10/24 15:24*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*105*		*70 - 130*	*06/07/24 15:05*	*06/10/24 15:24*	*1*
Perylene-d12	*89*		*70 - 130*	*06/07/24 15:05*	*06/10/24 15:24*	*1*
Triphenylphosphate	*105*		*70 - 130*	*06/07/24 15:05*	*06/10/24 15:24*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-98637-4

Date Collected: 06/04/24 11:40
Date Received: 06/06/24 10:02

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	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
2,4'-DDD	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
2,4'-DDE	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
2,4'-DDT	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
2-Methylnaphthalene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
4,4'-DDD	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
4,4'-DDE	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
4,4'-DDT	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Acenaphthene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Acenaphthylene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Acetochlor	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Alachlor	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
alpha-BHC	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
alpha-Chlordane	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Anthracene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:44	1
Atrazine	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Benz(a)anthracene	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Benzo[a]pyrene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:44	1

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

Job ID: 380-98637-1
SDG: 525.2

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Date Collected: 06/04/24 11:40
Date Received: 06/06/24 10:02

Lab Sample ID: 380-98637-4
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:44	1
Benzo[g,h,i]perylene	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:44	1
beta-BHC	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		06/07/24 15:05	06/10/24 15:44	1
Bromacil	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Butachlor	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Butylbenzylphthalate	<0.48		0.48		ug/L		06/07/24 15:05	06/10/24 15:44	1
Chlorobenzilate	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Chloroneb	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Chlorpyrifos	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Chrysene	<0.019		0.019		ug/L		06/07/24 15:05	06/10/24 15:44	1
delta-BHC	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		06/07/24 15:05	06/10/24 15:44	1
Dibenz(a,h)anthracene	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Diclorvos (DDVP)	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Dieldrin	**0.051**		0.0097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Diethylphthalate	<0.48		0.48		ug/L		06/07/24 15:05	06/10/24 15:44	1
Dimethylphthalate	<0.48		0.48		ug/L		06/07/24 15:05	06/10/24 15:44	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		06/07/24 15:05	06/10/24 15:44	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Endosulfan sulfate	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Endrin	<0.0097		0.0097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Endrin aldehyde	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
EPTC	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Fluoranthene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Fluorene	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
gamma-Chlordane	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Heptachlor	<0.0097		0.0097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Heptachlor epoxide (isomer B)	**0.015**		0.0097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Hexachlorobenzene	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Hexachlorocyclopentadiene	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Isophorone	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Lindane	<0.0097		0.0097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Malathion	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Methoxychlor	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Metolachlor	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Molinate	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Naphthalene	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Parathion	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Phenanthrene	<0.039		0.039		ug/L		06/07/24 15:05	06/10/24 15:44	1
Propachlor	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Pyrene	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Lab Sample ID: 380-98637-4

Date Collected: 06/04/24 11:40
Matrix: Drinking Water

Date Received: 06/06/24 10:02
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Simazine	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Terbacil	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Terbuthylazine	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Thiobencarb	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		06/07/24 15:05	06/10/24 15:44	1
trans-Nonachlor	<0.048		0.048		ug/L		06/07/24 15:05	06/10/24 15:44	1
Trifluralin	<0.097		0.097		ug/L		06/07/24 15:05	06/10/24 15:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/07/24 15:05*	*06/10/24 15:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*103*		*70 - 130*	*06/07/24 15:05*	*06/10/24 15:44*	*1*
Perylene-d12	*92*		*70 - 130*	*06/07/24 15:05*	*06/10/24 15:44*	*1*
Triphenylphosphate	*106*		*70 - 130*	*06/07/24 15:05*	*06/10/24 15:44*	*1*

Action Limit Summary

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

Job ID: 380-98637-1
SDG: 525.2

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-98637-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	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	<0.0098		ug/L	2	0.0098	525.2	Total/NA
Heptachlor	<0.0098		ug/L	0.4	0.0098	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.0098		ug/L	0.2	0.0098	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.0098		ug/L	0.2	0.0098	525.2	Total/NA
Methoxychlor	<0.049		ug/L	40	0.049	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-98637-2

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.0097		ug/L	2	0.0097	525.2	Total/NA
Heptachlor	<0.0097		ug/L	0.4	0.0097	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.0097		ug/L	0.2	0.0097	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.0097		ug/L	0.2	0.0097	525.2	Total/NA
Methoxychlor	<0.049		ug/L	40	0.049	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Action Limit Summary

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

Job ID: 380-98637-1
SDG: 525.2

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-98637-3

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	0.13		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	<0.0098		ug/L	2	0.0098	525.2	Total/NA
Heptachlor	<0.0098		ug/L	0.4	0.0098	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.0098		ug/L	0.2	0.0098	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.0098		ug/L	0.2	0.0098	525.2	Total/NA
Methoxychlor	<0.049		ug/L	40	0.049	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-98637-4

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 Limit	RL	Method	Prep Type
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.0097		ug/L	2	0.0097	525.2	Total/NA
Heptachlor	<0.0097		ug/L	0.4	0.0097	525.2	Total/NA
Heptachlor epoxide (isomer B)	0.015		ug/L	0.2	0.0097	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048		ug/L	50	0.048	525.2	Total/NA
Lindane	<0.0097		ug/L	0.2	0.0097	525.2	Total/NA
Methoxychlor	<0.048		ug/L	40	0.048	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-98637-1
SDG: 525.2

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

Matrix: Drinking Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-98637-1	MOANALUA WELLS (331-223-T	105	96	103
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	101	98	99
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	105	89	105
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	103	92	106

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**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-98781-B-1-A MS	Matrix Spike	99	97	111
380-98783-B-1-A DU	Duplicate	96	86	99
LCS 380-94019/24-A	Lab Control Sample	99	95	108
MB 380-94019/21-A	Method Blank	101	78	89
MRL 380-94019/22-A	Lab Control Sample	99	90	86
MRL 380-94019/23-A	Lab Control Sample	99	95	103

Surrogate Legend

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

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

Lab Sample ID: MB 380-94019/21-A
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 94019

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
2,4'-DDD	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
2,4'-DDE	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
2,4'-DDT	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
2-Methylnaphthalene	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
4,4'-DDD	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
4,4'-DDE	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
4,4'-DDT	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Acenaphthene	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Acenaphthylene	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Acetochlor	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Alachlor	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
alpha-BHC	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
alpha-Chlordane	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Anthracene	<0.020		0.020		ug/L		06/07/24 14:00	06/10/24 13:43	1
Atrazine	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/07/24 14:00	06/10/24 13:43	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/07/24 14:00	06/10/24 13:43	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/07/24 14:00	06/10/24 13:43	1
beta-BHC	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/07/24 14:00	06/10/24 13:43	1
Bromacil	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Butachlor	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/07/24 14:00	06/10/24 13:43	1
Chlorobenzilate	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Chloroneb	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Chlorpyrifos	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Chrysene	<0.020		0.020		ug/L		06/07/24 14:00	06/10/24 13:43	1
delta-BHC	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/07/24 14:00	06/10/24 13:43	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Dieldrin	<0.0099		0.0099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Diethylphthalate	<0.49		0.49		ug/L		06/07/24 14:00	06/10/24 13:43	1
Dimethylphthalate	<0.49		0.49		ug/L		06/07/24 14:00	06/10/24 13:43	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		06/07/24 14:00	06/10/24 13:43	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Endosulfan sulfate	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Endrin	<0.0099		0.0099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Endrin aldehyde	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
EPTC	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1

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

Lab Sample ID: MB 380-94019/21-A
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 94019

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Fluorene	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
gamma-Chlordane	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Heptachlor	<0.0099		0.0099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Heptachlor epoxide (isomer B)	<0.0099		0.0099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Isophorone	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Lindane	<0.0099		0.0099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Malathion	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Methoxychlor	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Metolachlor	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Molinate	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Naphthalene	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Parathion	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Phenanthrene	<0.039		0.039		ug/L		06/07/24 14:00	06/10/24 13:43	1
Propachlor	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Pyrene	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Simazine	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Terbacil	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Terbuthylazine	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Thiobencarb	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/07/24 14:00	06/10/24 13:43	1
trans-Nonachlor	<0.049		0.049		ug/L		06/07/24 14:00	06/10/24 13:43	1
Trifluralin	<0.099		0.099		ug/L		06/07/24 14:00	06/10/24 13:43	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentasiloxane, decamethyl-	*0.736*	*T J N*	*ug/L*		*2.64*	*541-02-6*	*06/07/24 14:00*	*06/10/24 13:43*	*1*
Cyclohexasiloxane, dodecamethyl-	*0.870*	*T J N*	*ug/L*		*3.18*	*540-97-6*	*06/07/24 14:00*	*06/10/24 13:43*	*1*
Unknown	*0.858*	*T J*	*ug/L*		*9.31*	*N/A*	*06/07/24 14:00*	*06/10/24 13:43*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*101*		*70 - 130*	*06/07/24 14:00*	*06/10/24 13:43*	*1*
Perylene-d12	*78*		*70 - 130*	*06/07/24 14:00*	*06/10/24 13:43*	*1*
Triphenylphosphate	*89*		*70 - 130*	*06/07/24 14:00*	*06/10/24 13:43*	*1*

Lab Sample ID: LCS 380-94019/24-A
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.98	1.96		ug/L		99	70 - 130
2,4'-DDD	1.98	2.15		ug/L		108	70 - 130
2,4'-DDE	1.98	2.17		ug/L		109	70 - 130
2,4'-DDT	1.98	2.03		ug/L		102	70 - 130
2,4-Dinitrotoluene	1.98	1.52		ug/L		76	70 - 130

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

Lab Sample ID: LCS 380-94019/24-A
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	1.98	1.65		ug/L		83	70 - 130
2-Methylnaphthalene	1.98	1.98		ug/L		100	70 - 130
4,4'-DDD	1.98	2.02		ug/L		102	70 - 130
4,4'-DDE	1.98	2.01		ug/L		101	70 - 130
4,4'-DDT	1.98	2.02		ug/L		102	70 - 130
Acenaphthene	1.98	1.96		ug/L		99	70 - 130
Acenaphthylene	1.98	1.96		ug/L		99	70 - 130
Acetochlor	1.98	2.30		ug/L		116	70 - 130
Alachlor	1.98	2.24		ug/L		113	70 - 130
alpha-BHC	1.98	1.94		ug/L		98	70 - 130
alpha-Chlordane	1.98	2.05		ug/L		103	70 - 130
Anthracene	1.98	1.67		ug/L		84	70 - 130
Atrazine	1.98	2.16		ug/L		109	70 - 130
Benz(a)anthracene	1.98	1.91		ug/L		96	70 - 130
Benzo[a]pyrene	1.98	1.69		ug/L		85	70 - 130
Benzo[b]fluoranthene	1.98	1.97		ug/L		99	70 - 130
Benzo[g,h,i]perylene	1.98	2.08		ug/L		105	70 - 130
Benzo[k]fluoranthene	1.98	2.16		ug/L		109	70 - 130
beta-BHC	1.98	2.14		ug/L		108	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	2.23		ug/L		112	70 - 130
Bromacil	1.98	1.83		ug/L		92	70 - 130
Butachlor	1.98	2.25		ug/L		114	70 - 130
Butylbenzylphthalate	1.98	2.29		ug/L		116	70 - 130
Chlorobenzilate	1.98	1.80		ug/L		91	70 - 130
Chloroneb	1.98	1.94		ug/L		98	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.04		ug/L		103	70 - 130
Chlorpyrifos	1.98	2.13		ug/L		107	70 - 130
Chrysene	1.98	2.00		ug/L		101	70 - 130
delta-BHC	1.98	2.21		ug/L		111	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.21		ug/L		111	70 - 130
Dibenz(a,h)anthracene	1.98	2.00		ug/L		101	70 - 130
Diclorvos (DDVP)	1.98	2.10		ug/L		106	70 - 130
Dieldrin	1.98	2.11		ug/L		106	70 - 130
Diethylphthalate	1.98	1.91		ug/L		96	70 - 130
Dimethylphthalate	1.98	2.06		ug/L		104	70 - 130
Di-n-butyl phthalate	3.97	4.29		ug/L		108	70 - 130
Di-n-octyl phthalate	1.98	1.88		ug/L		95	70 - 130
Endosulfan I (Alpha)	1.98	2.23		ug/L		112	70 - 130
Endosulfan II (Beta)	1.98	2.26		ug/L		114	70 - 130
Endosulfan sulfate	1.98	2.11		ug/L		107	70 - 130
Endrin	1.98	2.03		ug/L		102	70 - 130
Endrin aldehyde	1.98	1.22		ug/L		62	60 - 130
EPTC	1.98	2.03		ug/L		102	70 - 130
Fluoranthene	1.98	2.08		ug/L		105	70 - 130
Fluorene	1.98	1.96		ug/L		99	70 - 130
gamma-Chlordane	1.98	2.04		ug/L		103	70 - 130
Heptachlor	1.98	2.06		ug/L		104	70 - 130
Heptachlor epoxide (isomer B)	1.98	2.03		ug/L		102	70 - 130
Hexachlorobenzene	1.98	1.70		ug/L		85	70 - 130

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

Lab Sample ID: LCS 380-94019/24-A
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorocyclopentadiene	1.98	2.01		ug/L		101	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	1.97		ug/L		99	70 - 130
Isophorone	1.98	2.13		ug/L		107	70 - 130
Lindane	1.98	2.02		ug/L		102	70 - 130
Malathion	1.98	2.10		ug/L		106	70 - 130
Methoxychlor	1.98	2.10		ug/L		106	70 - 130
Metolachlor	1.98	2.41		ug/L		121	70 - 130
Molinate	1.98	2.00		ug/L		101	70 - 130
Naphthalene	1.98	1.88		ug/L		95	70 - 130
Parathion	1.98	2.05		ug/L		103	70 - 130
Pendimethalin (Penoxaline)	1.98	2.00		ug/L		101	70 - 130
Phenanthrene	1.98	1.98		ug/L		100	70 - 130
Propachlor	1.98	1.99		ug/L		100	70 - 130
Pyrene	1.98	2.01		ug/L		101	70 - 130
Simazine	1.98	2.09		ug/L		105	70 - 130
Terbacil	1.98	2.02		ug/L		102	70 - 130
Terbuthylazine	1.98	2.15		ug/L		109	70 - 130
Thiobencarb	1.98	2.22		ug/L		112	70 - 130
trans-Nonachlor	1.98	2.12		ug/L		107	70 - 130
Trifluralin	1.98	1.76		ug/L		89	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*99*		*70 - 130*
Perylene-d12	*95*		*70 - 130*
Triphenylphosphate	*108*		*70 - 130*

Lab Sample ID: MRL 380-94019/22-A
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Dieldrin	0.00983	0.00730	J	ug/L		74	50 - 150
Endrin	0.00983	0.0104		ug/L		106	50 - 150
Heptachlor	0.00983	0.00885	J	ug/L		90	50 - 150
Heptachlor epoxide (isomer B)	0.00983	0.00926	J	ug/L		94	50 - 150
Lindane	0.00983	0.00865	J	ug/L		88	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*99*		*70 - 130*
Perylene-d12	*90*		*70 - 130*
Triphenylphosphate	*86*		*70 - 130*

Lab Sample ID: MRL 380-94019/23-A
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0985	0.110		ug/L		111	50 - 150

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

Lab Sample ID: MRL 380-94019/23-A
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	0.0985	0.123		ug/L		124	50 - 150
2,4'-DDE	0.0985	0.111		ug/L		113	50 - 150
2,4'-DDT	0.0985	0.110		ug/L		111	50 - 150
2,4-Dinitrotoluene	0.0985	0.0910	J	ug/L		92	50 - 150
2,6-Dinitrotoluene	0.0985	0.0944	J	ug/L		96	50 - 150
2-Methylnaphthalene	0.0985	0.105		ug/L		107	50 - 150
4,4'-DDD	0.0985	0.116		ug/L		117	50 - 150
4,4'-DDE	0.0985	0.104		ug/L		106	50 - 150
4,4'-DDT	0.0985	0.117		ug/L		119	50 - 150
Acenaphthene	0.0985	0.0948	J	ug/L		96	50 - 150
Acenaphthylene	0.0985	0.0890	J	ug/L		90	50 - 150
Acetochlor	0.0493	0.0530	J	ug/L		108	50 - 150
Alachlor	0.0493	0.0486	J	ug/L		99	50 - 150
alpha-BHC	0.0985	0.103		ug/L		105	50 - 150
alpha-Chlordane	0.0246	<0.029		ug/L		108	50 - 150
Anthracene	0.0197	<0.019		ug/L		91	50 - 150
Atrazine	0.0493	0.0494		ug/L		100	50 - 150
Benz(a)anthracene	0.0493	0.0474	J	ug/L		96	50 - 150
Benzo[a]pyrene	0.0197	0.0165	J	ug/L		84	50 - 150
Benzo[b]fluoranthene	0.0197	0.0197	J	ug/L		100	50 - 150
Benzo[g,h,i]perylene	0.0493	0.0371	J	ug/L		75	50 - 150
Benzo[k]fluoranthene	0.0197	0.0201		ug/L		102	50 - 150
beta-BHC	0.0985	0.0985	J	ug/L		100	50 - 150
Bis(2-ethylhexyl) phthalate	0.591	0.693		ug/L		117	50 - 150
Bromacil	0.0985	0.107		ug/L		109	50 - 150
Butachlor	0.0493	0.0691		ug/L		140	50 - 150
Butylbenzylphthalate	0.148	0.172	J	ug/L		116	50 - 150
Chlorobenzilate	0.0985	0.0983	J	ug/L		100	50 - 150
Chloroneb	0.0985	0.106		ug/L		108	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0985	0.102		ug/L		104	50 - 150
Chlorpyrifos	0.0493	0.0606		ug/L		123	50 - 150
Chrysene	0.0197	0.0206		ug/L		105	50 - 150
delta-BHC	0.0985	0.106		ug/L		107	50 - 150
Di(2-ethylhexyl)adipate	0.296	0.352	J	ug/L		119	50 - 150
Dibenz(a,h)anthracene	0.0493	0.0409	J	ug/L		83	50 - 150
Diclorvos (DDVP)	0.0493	0.0591		ug/L		120	50 - 150
Diethylphthalate	0.148	0.156	J	ug/L		106	50 - 150
Dimethylphthalate	0.296	0.311	J	ug/L		105	50 - 150
Di-n-butyl phthalate	0.296	0.353	J	ug/L		119	49 - 243
Di-n-octyl phthalate	0.0985	0.105		ug/L		106	50 - 150
Endosulfan I (Alpha)	0.0985	0.102		ug/L		104	50 - 150
Endosulfan II (Beta)	0.0985	0.120		ug/L		122	50 - 150
Endosulfan sulfate	0.0985	0.114		ug/L		115	50 - 150
Endrin aldehyde	0.0985	0.0898	J	ug/L		91	50 - 150
EPTC	0.0985	0.0997		ug/L		101	50 - 150
Fluoranthene	0.0493	0.0534	J	ug/L		108	50 - 150
Fluorene	0.0493	<0.049		ug/L		96	50 - 150
gamma-Chlordane	0.0246	0.0248	J	ug/L		101	50 - 150
Hexachlorobenzene	0.0493	0.0454	J	ug/L		92	50 - 150

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

Lab Sample ID: MRL 380-94019/23-A
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorocyclopentadiene	0.0493	0.0440	J	ug/L		89	50 - 150
Indeno[1,2,3-cd]pyrene	0.0493	0.0436	J	ug/L		88	50 - 150
Isophorone	0.0985	0.114		ug/L		116	50 - 150
Malathion	0.0985	0.105		ug/L		107	50 - 150
Methoxychlor	0.0985	0.114		ug/L		116	50 - 150
Metolachlor	0.0493	0.0561		ug/L		114	50 - 150
Molinate	0.0985	0.104		ug/L		106	50 - 150
Naphthalene	0.0985	0.102		ug/L		104	50 - 150
Parathion	0.0985	0.107		ug/L		109	50 - 150
Pendimethalin (Penoxaline)	0.0985	0.0962	J	ug/L		98	50 - 150
Phenanthrene	0.0197	0.0209	J	ug/L		106	50 - 150
Propachlor	0.0493	0.0453	J	ug/L		92	50 - 150
Pyrene	0.0493	0.0522		ug/L		106	50 - 150
Simazine	0.0493	0.0475	J	ug/L		96	50 - 150
Terbacil	0.0985	0.0933	J	ug/L		95	50 - 150
Terbuthylazine	0.0985	0.100		ug/L		101	50 - 150
Thiobencarb	0.0985	0.111		ug/L		112	50 - 150
trans-Nonachlor	0.0246	0.0278	J	ug/L		113	50 - 150
Trifluralin	0.0985	0.0895	J	ug/L		91	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*99*		*70 - 130*
Perylene-d12	*95*		*70 - 130*
Triphenylphosphate	*103*		*70 - 130*

Lab Sample ID: 380-98781-B-1-A MS
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.099		1.97	2.08		ug/L		105	70 - 130
2,4'-DDD	<0.099		1.97	2.29		ug/L		116	70 - 130
2,4'-DDE	<0.099		1.97	2.37		ug/L		120	70 - 130
2,4'-DDT	<0.099		1.97	2.22		ug/L		112	70 - 130
2,4-Dinitrotoluene	<0.099		1.97	1.57		ug/L		80	70 - 130
2,6-Dinitrotoluene	<0.099		1.97	1.76		ug/L		89	70 - 130
2-Methylnaphthalene	<0.099		1.97	2.06		ug/L		104	70 - 130
4,4'-DDD	<0.099		1.97	2.18		ug/L		111	70 - 130
4,4'-DDE	<0.099		1.97	2.16		ug/L		109	70 - 130
4,4'-DDT	<0.099		1.97	2.19		ug/L		111	70 - 130
Acenaphthene	<0.099		1.97	2.05		ug/L		104	70 - 130
Acenaphthylene	<0.099		1.97	2.06		ug/L		105	70 - 130
Acetochlor	<0.099		1.97	2.52		ug/L		128	70 - 130
Alachlor	<0.049		1.97	2.40		ug/L		122	70 - 130
alpha-BHC	<0.099		1.97	2.02		ug/L		102	70 - 130
alpha-Chlordane	<0.049		1.97	2.19		ug/L		111	70 - 130
Anthracene	<0.020		1.97	1.88		ug/L		95	70 - 130
Atrazine	<0.049		1.97	2.25		ug/L		114	70 - 130

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

Lab Sample ID: 380-98781-B-1-A MS
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benz(a)anthracene	<0.049		1.97	2.10		ug/L		106	70 - 130
Benzo[a]pyrene	<0.020		1.97	1.94		ug/L		98	70 - 130
Benzo[b]fluoranthene	<0.020		1.97	2.16		ug/L		110	70 - 130
Benzo[g,h,i]perylene	<0.049		1.97	2.39		ug/L		121	70 - 130
Benzo[k]fluoranthene	<0.020		1.97	2.27		ug/L		115	70 - 130
beta-BHC	<0.099		1.97	2.15		ug/L		109	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.97	2.47		ug/L		125	70 - 130
Bromacil	<0.099		1.97	1.99		ug/L		101	70 - 130
Butachlor	<0.049		1.97	2.41		ug/L		122	70 - 130
Butylbenzylphthalate	<0.49		1.97	2.45		ug/L		124	70 - 130
Chlorobenzilate	<0.099		1.97	1.83		ug/L		93	70 - 130
Chloroneb	<0.099		1.97	1.94		ug/L		98	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.099		1.97	2.17		ug/L		110	70 - 130
Chlorpyrifos	<0.049		1.97	2.33		ug/L		118	70 - 130
Chrysene	<0.020		1.97	2.12		ug/L		108	70 - 130
delta-BHC	<0.099		1.97	2.28		ug/L		116	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.97	2.42		ug/L		123	70 - 130
Dibenz(a,h)anthracene	<0.049		1.97	2.26		ug/L		115	70 - 130
Diclorvos (DDVP)	<0.049		1.97	2.19		ug/L		111	70 - 130
Dieldrin	<0.0099		1.97	2.33		ug/L		118	70 - 130
Diethylphthalate	<0.49		1.97	1.97		ug/L		94	70 - 130
Dimethylphthalate	<0.49		1.97	2.11		ug/L		107	70 - 130
Di-n-butyl phthalate	<0.99		3.95	4.62		ug/L		117	70 - 130
Di-n-octyl phthalate	<0.099		1.97	2.17		ug/L		110	70 - 130
Endosulfan I (Alpha)	<0.099		1.97	2.39		ug/L		121	70 - 130
Endosulfan II (Beta)	<0.099		1.97	2.47		ug/L		125	70 - 130
Endosulfan sulfate	<0.099		1.97	2.30		ug/L		116	70 - 130
Endrin	<0.0099		1.97	2.20		ug/L		112	70 - 130
Endrin aldehyde	<0.099		1.97	1.58		ug/L		80	60 - 130
EPTC	<0.099		1.97	2.17		ug/L		110	70 - 130
Fluoranthene	<0.099		1.97	2.20		ug/L		112	70 - 130
Fluorene	<0.049		1.97	2.03		ug/L		103	70 - 130
gamma-Chlordane	<0.049		1.97	2.22		ug/L		112	70 - 130
Heptachlor	<0.0099		1.97	2.26		ug/L		115	70 - 130
Heptachlor epoxide (isomer B)	<0.0099		1.97	2.18		ug/L		111	70 - 130
Hexachlorobenzene	<0.049		1.97	1.74		ug/L		88	70 - 130
Hexachlorocyclopentadiene	<0.049		1.97	2.09		ug/L		106	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.97	2.23		ug/L		113	70 - 130
Isophorone	<0.099		1.97	2.23		ug/L		113	70 - 130
Lindane	<0.0099		1.97	2.11		ug/L		107	70 - 130
Malathion	<0.099		1.97	2.27		ug/L		115	70 - 130
Methoxychlor	<0.049		1.97	2.23		ug/L		113	70 - 130
Metolachlor	<0.049		1.97	2.56		ug/L		129	70 - 130
Molinate	<0.099		1.97	2.10		ug/L		106	70 - 130
Naphthalene	<0.099		1.97	1.99		ug/L		101	70 - 130
Parathion	<0.099		1.97	2.22		ug/L		113	70 - 130
Pendimethalin (Penoxaline)	<0.099		1.97	2.19		ug/L		111	70 - 130
Phenanthrene	<0.040		1.97	2.09		ug/L		106	70 - 130
Propachlor	<0.049		1.97	2.11		ug/L		107	70 - 130

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

Lab Sample ID: 380-98781-B-1-A MS
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Pyrene	<0.049		1.97	2.14		ug/L		109	70 - 130
Simazine	<0.049		1.97	2.19		ug/L		111	70 - 130
Terbacil	<0.099		1.97	2.15		ug/L		109	70 - 130
Terbuthylazine	<0.099		1.97	2.26		ug/L		115	70 - 130
Thiobencarb	<0.099		1.97	2.39		ug/L		121	70 - 130
trans-Nonachlor	<0.049		1.97	2.30		ug/L		117	70 - 130
Trifluralin	<0.099		1.97	1.82		ug/L		92	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*99*		*70 - 130*
Perylene-d12	*97*		*70 - 130*
Triphenylphosphate	*111*		*70 - 130*

Lab Sample ID: 380-98783-B-1-A DU
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.097		<0.098		ug/L		NC	20
2,4'-DDD	<0.097		<0.098		ug/L		NC	20
2,4'-DDE	<0.097		<0.098		ug/L		NC	20
2,4'-DDT	<0.097		<0.098		ug/L		NC	20
2,4-Dinitrotoluene	<0.097		<0.098		ug/L		NC	20
2,6-Dinitrotoluene	<0.097		<0.098		ug/L		NC	20
2-Methylnaphthalene	<0.097		<0.098		ug/L		NC	20
4,4'-DDD	<0.097		<0.098		ug/L		NC	20
4,4'-DDE	<0.097		<0.098		ug/L		NC	20
4,4'-DDT	<0.097		<0.098		ug/L		NC	20
Acenaphthene	<0.097		<0.098		ug/L		NC	20
Acenaphthylene	<0.097		<0.098		ug/L		NC	20
Acetochlor	<0.097		<0.098		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.097		<0.098		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.019		<0.020		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.019		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.019		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.019		<0.020		ug/L		NC	20
beta-BHC	<0.097		<0.098		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.58		<0.59		ug/L		NC	20
Bromacil	<0.097		<0.098		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.097		<0.098		ug/L		NC	20
Chloroneb	<0.097		<0.098		ug/L		NC	20

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

Lab Sample ID: 380-98783-B-1-A DU
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 94019

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chlorothalonil (Draconil, Bravo)	<0.097			<0.098		ug/L				NC	20
Chlorpyrifos	<0.049			<0.049		ug/L				NC	20
Chrysene	<0.019			<0.020		ug/L				NC	20
delta-BHC	<0.097			<0.098		ug/L				NC	20
Di(2-ethylhexyl)adipate	<0.58			<0.59		ug/L				NC	20
Dibenz(a,h)anthracene	<0.049			<0.049		ug/L				NC	20
Diclorvos (DDVP)	<0.049			<0.049		ug/L				NC	20
Dieldrin	<0.0097			<0.0098		ug/L				NC	20
Diethylphthalate	<0.49			<0.49		ug/L				NC	20
Dimethylphthalate	<0.49			<0.49		ug/L				NC	20
Di-n-butyl phthalate	<0.97			<0.98		ug/L				NC	20
Di-n-octyl phthalate	<0.097			<0.098		ug/L				NC	20
Endosulfan I (Alpha)	<0.097			<0.098		ug/L				NC	20
Endosulfan II (Beta)	<0.097			<0.098		ug/L				NC	20
Endosulfan sulfate	<0.097			<0.098		ug/L				NC	20
Endrin	<0.0097			<0.0098		ug/L				NC	20
Endrin aldehyde	<0.097			<0.098		ug/L				NC	20
EPTC	<0.097			<0.098		ug/L				NC	20
Fluoranthene	<0.097			<0.098		ug/L				NC	20
Fluorene	<0.049			<0.049		ug/L				NC	20
gamma-Chlordane	<0.049			<0.049		ug/L				NC	20
Heptachlor	<0.0097			<0.0098		ug/L				NC	20
Heptachlor epoxide (isomer B)	<0.0097			<0.0098		ug/L				NC	20
Hexachlorobenzene	<0.049			<0.049		ug/L				NC	20
Hexachlorocyclopentadiene	<0.049			<0.049		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	<0.049			<0.049		ug/L				NC	20
Isophorone	<0.097			<0.098		ug/L				NC	20
Lindane	<0.0097			<0.0098		ug/L				NC	20
Malathion	<0.097			<0.098		ug/L				NC	20
Methoxychlor	<0.049			<0.049		ug/L				NC	20
Metolachlor	<0.049			<0.049		ug/L				NC	20
Molinate	<0.097			<0.098		ug/L				NC	20
Naphthalene	<0.097			<0.098		ug/L				NC	20
Parathion	<0.097			<0.098		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.097			<0.098		ug/L				NC	20
Phenanthrene	<0.039			<0.039		ug/L				NC	20
Propachlor	<0.049			<0.049		ug/L				NC	20
Pyrene	<0.049			<0.049		ug/L				NC	20
Simazine	<0.049			<0.049		ug/L				NC	20
Terbacil	<0.097			<0.098		ug/L				NC	20
Terbuthylazine	<0.097			<0.098		ug/L				NC	20
Thiobencarb	<0.097			<0.098		ug/L				NC	20
Total Permethrin (mixed isomers)	<0.19			<0.20		ug/L				NC	20
trans-Nonachlor	<0.049			<0.049		ug/L				NC	20
Trifluralin	<0.097			<0.098		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*96*		*70 - 130*

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

Lab Sample ID: 380-98783-B-1-A DU
Matrix: Water
Analysis Batch: 94284

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 94019

Surrogate	DU %Recovery	DU Qualifier	Limits
Perylene-d12	*86*		*70 - 130*
Triphenylphosphate	*99*		*70 - 130*

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

Job ID: 380-98637-1
SDG: 525.2

GC/MS Semi VOA

Prep Batch: 94019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-98637-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	525.2	
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	
MB 380-94019/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-94019/24-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-94019/22-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-94019/23-A	Lab Control Sample	Total/NA	Water	525.2	
380-98781-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-98783-B-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 94284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-98637-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	94019
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	94019
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	525.2	94019
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	94019
MB 380-94019/21-A	Method Blank	Total/NA	Water	525.2	94019
LCS 380-94019/24-A	Lab Control Sample	Total/NA	Water	525.2	94019
MRL 380-94019/22-A	Lab Control Sample	Total/NA	Water	525.2	94019
MRL 380-94019/23-A	Lab Control Sample	Total/NA	Water	525.2	94019
380-98781-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	94019
380-98783-B-1-A DU	Duplicate	Total/NA	Water	525.2	94019

Lab Chronicle

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

Job ID: 380-98637-1
SDG: 525.2

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-98637-1
Date Collected: 06/04/24 11:21
Matrix: Drinking Water
Date Received: 06/06/24 10:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			94019	IQ42	EA POM	06/07/24 15:05
Total/NA	Analysis	525.2		1	94284	X8AA	EA POM	06/10/24 14:44

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-98637-2
Date Collected: 06/04/24 12:00
Matrix: Drinking Water
Date Received: 06/06/24 10:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			94019	IQ42	EA POM	06/07/24 15:05
Total/NA	Analysis	525.2		1	94284	X8AA	EA POM	06/10/24 15:04

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-98637-3
Date Collected: 06/04/24 12:25
Matrix: Drinking Water
Date Received: 06/06/24 10:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			94019	IQ42	EA POM	06/07/24 15:05
Total/NA	Analysis	525.2		1	94284	X8AA	EA POM	06/10/24 15:24

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-98637-4
Date Collected: 06/04/24 11:40
Matrix: Drinking Water
Date Received: 06/06/24 10:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			94019	IQ42	EA POM	06/07/24 15:05
Total/NA	Analysis	525.2		1	94284	X8AA	EA POM	06/10/24 15:44

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-98637-1
SDG: 525.2

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	01-31-25

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	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	beta-BHC
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	delta-BHC
525.2	525.2	Drinking Water	Diclorvos (DDVP)
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	gamma-Chlordane
525.2	525.2	Drinking Water	Isophorone
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbuthylazine
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor

Method Summary

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

Job ID: 380-98637-1
SDG: 525.2

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
525.2	Extraction of Semivolatile Compounds	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

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

Job ID: 380-98637-1
SDG: 525.2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-98637-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	06/04/24 11:21	06/06/24 10:02	HI0000331
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	06/04/24 12:00	06/06/24 10:02	HI0000331
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	06/04/24 12:25	06/06/24 10:02	HI0000331
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	06/04/24 11:40	06/06/24 10:02	HI0000331

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

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27984-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

380-98637 COC

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges: C10-C24/C24-C36/C8-C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	A	Q		Y	N		
MOANALUA WELLS	4-Jun-2024	1121	G	Water			2	4	2	2				chlorinated
AIEA GULCH WELLS PUMP2	4-Jun-2024	1200	G	Water			2	4	2	2				chlorinated
AIEA WELLS PUMPS 1&2 (260)	4-Jun-2024	1225	G	Water			2	4	2	2				
HALAWA WELLS UNITS 1&2	4-Jun-2024	1140	G	Water			2	4	2	2				
TB MOANALUA WELLS	4-Jun-2024	1121	G	Water				2						
TB AIEA GULCH WELLS PUMP2	4-Jun-2024	1200	G	Water				2						
TB AIEA WELLS PUMPS 1&2 (260)	4-Jun-2024	1225	G	Water				2						
TB HALAWA WELLS UNITS 1&2	4-Jun-2024	1140	G	Water				2						

4 of 4 REC. EMPTY
ONLY REC. 3 VIALS
1 of 2 REC. BROKEN

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/5/24 1100	HBWS	2	6/6/24 1002	GEL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 6.3 IR 3.3-0.1 = 3.2 GEL

ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 05JUN24
ACTWGT: 62.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
INV:
PO: DEPT:

583J3/6CA9/9AE3

FedEx Express

J4220240326010v

1 of 8

THU - 06 JUN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7767 1826 3645
MASTER

WM ONTA

91768
CA-US ONT

631A 3-3-0-1 = 3-2 OK

6/6/24 1020

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 05JUN24
ACTWGT: 62.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
INV:
PO: DEPT:

583J3/6CA9/9AE3

FedEx Express

J242024032601uv

3 of 8

THU - 06 JUN 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7767 1826 3667
Mstr# 7767 1826 3645

0201

91768

WM ONTA

CA-US ONT

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631A 3-8-01 =3.7 ~~6~~5

6/6/24

10L2

ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 05JUN24
ACTWGT: 62.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
INV:
PO: DEPT:

583J3/6CA9/9AE3

FedEx Express

J2420240326001uv

2 of 8
MPS# 0263 7767 1826 3656
Mstr# 7767 1826 3645

THU - 06 JUN 10:30A
PRIORITY OVERNIGHT

0201

91768
ONT
CA-US

WM ONTA

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6316A 3-1-01 -30 6DC

6/6/24 1022

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

Chain of Custody Record

eurofins | Environment Testing

Loc: 380
98637

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-129529.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.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 #: 380-98637-1
Address: 2841 Dow Avenue, Suite 100, ,	Due Date Requested: 6/26/2024			Preservation Codes: -
City: Tustin	TAT Requested (days):			
State, Zip: CA, 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			Other:

Analysis Requested

380-98637 Chain of Custody

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO_LL_CS/3510C_LL HNL Ranges: C10-C24/C24-C36/C8-C18	8015B_GRO_LL/5030C (MOD) GRO	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MOANALUA WELLS (331-223-TP202) (380-98637-1)	6/4/24	11:21 Hawaiian		Water			X	X	6	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-98637-2)	6/4/24	12:00 Hawaiian		Water			X		2	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-98637-3)	6/4/24	12:25 Hawaiian		Water			X	X	4	initial volume (500ml) and final volume (2ml). MRLs are needed.
HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-98637-4)	6/4/24	11:40 Hawaiian		Water			X	X	6	initial volume (500ml) and final volume (2ml). MRLs are needed.
TB:MOANALUA WELLS (331-223-TP202) (380-98637-5)	6/4/24	11:21 Hawaiian		Water				X	2	MRLs are needed.
TB:AIEA GULCH WELLS P2 (331-202-TP072) (380-98637-6)	6/4/24	12:00 Hawaiian		Water				X	2	MRLs are needed.
TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-9863	6/4/24	12:25 Hawaiian		Water				X	2	MRLs are needed.
TB: HALAWA WELLS UNITS 1&2 (331-206-TP065) (380-98637-8	6/4/24	11:40 Hawaiian		Water				X	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.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ 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:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] Yuol	6/6/24 1503	Eurofins	[signature]	6/6/24 1503	DCS
2	[signature]	6/6/24 1557	DCS	[signature]	6/6/24 1557	EEC
3						

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.5/1.6 Sealed

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-98637-1
SDG Number: 525.2

Login Number: 98637
List Number: 1
Creator: Sanchez Velasquez, Gustavo

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 7/2/2024 9:43:18 AM

JOB DESCRIPTION

RED-HILL [SUBCONTRACT]
625, 8015
RUSH Weekly Red Hill

JOB NUMBER

380-98637-2

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

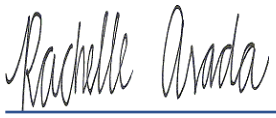
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-98637-2
SDG: 625, 8015

Glossary

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

Job ID: 380-98637-2 — Eurofins Eaton Analytical Pomona

Job Narrative
380-98637-2

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 6/6/2024 10:02 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.0°C, 3.2°C and 3.7°C.

Receipt Exceptions
One or more containers for the following sample(s) was received broken or leaking: Aiea Gulch Wells Pump 2 8015B_GRO 4 of 4 containers were received empty. Analysis of corresponding trib blanks have been cancelled as well.

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.

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

Diesel Range Organics
Method 8015B_DRO_LL_CS: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-449992. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

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

Detection Summary

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

Job ID: 380-98637-2
SDG: 625, 8015

Client Sample ID: MOANALUA WELLS (331-223-TP202)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1-Methylphenanthrene	0.0113		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Anthracene	0.00852		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Benz[a]anthracene	0.27		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Benzo[a]pyrene	0.0999		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Benzo[b]fluoranthene	0.213		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Benzo[e]pyrene	0.0857		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Benzo[g,h,i]perylene	0.0489		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Benzo[k]fluoranthene	0.189		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Chrysene	0.199		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Dibenz[a,h]anthracene	0.0269		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Dibenzo[a,l]pyrene	0.0172		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Fluoranthene	0.324		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Indeno[1,2,3-cd]pyrene	0.0786		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Perylene	0.0361		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Phenanthrene	0.0231		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Pyrene	0.356		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[g,h,i]perylene	0.0182		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

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

Job ID: 380-98637-2
SDG: 625, 8015

Client Sample ID: TB:MOANALUA WELLS (331-223-TP202)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-5

No Detections.

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-7

No Detections.

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-98637-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Date Collected: 06/04/24 11:21
Date Received: 06/06/24 10:02

Lab Sample ID: 380-98637-1

Matrix: Drinking Water
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			06/07/24 22:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*38 - 134*		*06/07/24 22:31*	*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)	<26		26		ug/L		06/11/24 20:06	06/23/24 00:24	1
Motor Oil Range Organics [C24-C36]	<26		26		ug/L		06/11/24 20:06	06/23/24 00:24	1
C8-C18	<26		26		ug/L		06/11/24 20:06	06/23/24 00:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*103*		*60 - 130*	*06/11/24 20:06*	*06/23/24 00:24*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Acenaphthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Biphenyl	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Chrysene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/11/24 00:00	06/25/24 04:56	1
Fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Fluorene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Naphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Perylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Phenanthrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1
Pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 04:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*52*		*27 - 133*	*06/11/24 00:00*	*06/25/24 04:56*	*1*
(d10-Phenanthrene)	*58*		*43 - 129*	*06/11/24 00:00*	*06/25/24 04:56*	*1*
(d12-Chrysene)	*69*		*52 - 144*	*06/11/24 00:00*	*06/25/24 04:56*	*1*
(d12-Perylene)	*104*		*36 - 161*	*06/11/24 00:00*	*06/25/24 04:56*	*1*
(d8-Naphthalene)	*46*		*25 - 125*	*06/11/24 00:00*	*06/25/24 04:56*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-98637-2

Date Collected: 06/04/24 12:00
Date Received: 06/06/24 10:02

Matrix: Drinking Water
PWSID Number: HI0000331

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)	<26		26		ug/L		06/11/24 20:06	06/23/24 00:45	1
Motor Oil Range Organics [C24-C36]	<26		26		ug/L		06/11/24 20:06	06/23/24 00:45	1
C8-C18	<26		26		ug/L		06/11/24 20:06	06/23/24 00:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*94*		*60 - 130*	*06/11/24 20:06*	*06/23/24 00:45*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Acenaphthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Biphenyl	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Chrysene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/11/24 00:00	06/25/24 06:44	1
Fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Fluorene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Naphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Perylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Phenanthrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1
Pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 06:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*69*		*27 - 133*	*06/11/24 00:00*	*06/25/24 06:44*	*1*
(d10-Phenanthrene)	*77*		*43 - 129*	*06/11/24 00:00*	*06/25/24 06:44*	*1*
(d12-Chrysene)	*68*		*52 - 144*	*06/11/24 00:00*	*06/25/24 06:44*	*1*
(d12-Perylene)	*93*		*36 - 161*	*06/11/24 00:00*	*06/25/24 06:44*	*1*
(d8-Naphthalene)	*61*		*25 - 125*	*06/11/24 00:00*	*06/25/24 06:44*	*1*

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Date Collected: 06/04/24 12:25
Date Received: 06/06/24 10:02

Lab Sample ID: 380-98637-3

Matrix: Drinking Water
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			06/07/24 23:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*38 - 134*		*06/07/24 23:24*	*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		06/11/24 20:06	06/23/24 01:06	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		06/11/24 20:06	06/23/24 01:06	1
C8-C18	<25		25		ug/L		06/11/24 20:06	06/23/24 01:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*87*		*60 - 130*	*06/11/24 20:06*	*06/23/24 01:06*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
1-Methylphenanthrene	**0.0113**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Acenaphthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Anthracene	**0.00852**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Benz[a]anthracene	**0.27**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Benzo[a]pyrene	**0.0999**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Benzo[b]fluoranthene	**0.213**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Benzo[e]pyrene	**0.0857**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Benzo[g,h,i]perylene	**0.0489**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Benzo[k]fluoranthene	**0.189**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Biphenyl	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Chrysene	**0.199**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Dibenz[a,h]anthracene	**0.0269**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Dibenzo[a,l]pyrene	**0.0172**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/11/24 00:00	06/25/24 08:31	1
Fluoranthene	**0.324**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Fluorene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Indeno[1,2,3-cd]pyrene	**0.0786**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Naphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Perylene	**0.0361**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Phenanthrene	**0.0231**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1
Pyrene	**0.356**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 08:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*43*		*27 - 133*	*06/11/24 00:00*	*06/25/24 08:31*	*1*
(d10-Phenanthrene)	*50*		*43 - 129*	*06/11/24 00:00*	*06/25/24 08:31*	*1*
(d12-Chrysene)	*56*		*52 - 144*	*06/11/24 00:00*	*06/25/24 08:31*	*1*
(d12-Perylene)	*74*		*36 - 161*	*06/11/24 00:00*	*06/25/24 08:31*	*1*

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-98637-3

Date Collected: 06/04/24 12:25
Date Received: 06/06/24 10:02

Matrix: Drinking Water
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d8-Naphthalene)	*40*		*25 - 125*	*06/11/24 00:00*	*06/25/24 08:31*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-98637-4

Date Collected: 06/04/24 11:40
Date Received: 06/06/24 10:02

Matrix: Drinking Water
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			06/07/24 22:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*38 - 134*		*06/07/24 22:58*	*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		06/11/24 20:06	06/23/24 01:26	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		06/11/24 20:06	06/23/24 01:26	1
C8-C18	<25		25		ug/L		06/11/24 20:06	06/23/24 01:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*97*		*60 - 130*	*06/11/24 20:06*	*06/23/24 01:26*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Acenaphthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Benzo[g,h,i]perylene	**0.0182**		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Biphenyl	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Chrysene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/11/24 00:00	06/25/24 10:19	1
Fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Fluorene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Naphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-98637-4

Date Collected: 06/04/24 11:40
Date Received: 06/06/24 10:02

Matrix: Drinking Water
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Phenanthrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1
Pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/25/24 10:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*68*		*27 - 133*	*06/11/24 00:00*	*06/25/24 10:19*	*1*
(d10-Phenanthrene)	*75*		*43 - 129*	*06/11/24 00:00*	*06/25/24 10:19*	*1*
(d12-Chrysene)	*65*		*52 - 144*	*06/11/24 00:00*	*06/25/24 10:19*	*1*
(d12-Perylene)	*87*		*36 - 161*	*06/11/24 00:00*	*06/25/24 10:19*	*1*
(d8-Naphthalene)	*59*		*25 - 125*	*06/11/24 00:00*	*06/25/24 10:19*	*1*

Client Sample ID: TB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-98637-5

Date Collected: 06/04/24 11:21
Date Received: 06/06/24 10:02

Matrix: Water
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			06/07/24 17:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*38 - 134*		*06/07/24 17:56*	*1*

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-98637-7

Date Collected: 06/04/24 12:25
Date Received: 06/06/24 10:02

Matrix: Water
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			06/07/24 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*38 - 134*		*06/07/24 18:23*	*1*

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-98637-8

Date Collected: 06/04/24 11:40
Date Received: 06/06/24 10:02

Matrix: Water
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			06/07/24 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*38 - 134*		*06/07/24 18:49*	*1*

Surrogate Summary

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

Job ID: 380-98637-2
SDG: 625, 8015

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB1 (38-134)
380-98637-1	MOANALUA WELLS (331-223-T	107
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	92
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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)
380-97742-C-1 MSD	Matrix Spike Duplicate	109
380-97742-F-1 MS	Matrix Spike	116
380-98637-5	TB:MOANALUA WELLS (331-223-TP202)	105
380-98637-7	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	109
380-98637-8	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	105
LCS 570-448672/4	Lab Control Sample	106
LCSD 570-448672/5	Lab Control Sample Dup	105
MB 570-448672/6	Method Blank	100
MRL 570-448672/3	Lab Control Sample	99

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)
380-98637-1	MOANALUA WELLS (331-223-T	103
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	94
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	87
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	97

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Surrogate Summary

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

Job ID: 380-98637-2
SDG: 625, 8015

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTCSN1
Lab Sample ID	Client Sample ID	(60-130)
LCS 570-449992/2-A	Lab Control Sample	102
LCSD 570-449992/3-A	Lab Control Sample Dup	104
MB 570-449992/1-A	Method Blank	105
MRL 570-449992/4-A	Lab Control Sample	103

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
118762-B1	Method Blank	86	91	94	81	107
118762-BS1	Lab Control Sample	85	101	75	75	89
118762-BS2	Lab Control Sample Dup	82	95	75	72	91

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
380-98637-1	MOANALUA WELLS (331-223-T	52	58	69	46	104
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	69	77	68	61	93
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	43	50	56	40	74
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	68	75	65	59	87

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

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

Lab Sample ID: MB 570-448672/6
Matrix: Water
Analysis Batch: 448672

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			06/07/24 15:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*38 - 134*		*06/07/24 15:36*	*1*

Lab Sample ID: LCS 570-448672/4
Matrix: Water
Analysis Batch: 448672

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)			400	341		ug/L		85	78 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*38 - 134*

Lab Sample ID: LCSD 570-448672/5
Matrix: Water
Analysis Batch: 448672

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)			400	347		ug/L		87	78 - 120	2	10

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

Lab Sample ID: MRL 570-448672/3
Matrix: Water
Analysis Batch: 448672

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	12.1		ug/L		121	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*38 - 134*

Lab Sample ID: 380-97742-C-1 MSD
Matrix: Water
Analysis Batch: 448672

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
Gasoline Range Organics (C4-C13)	<10		400	331		ug/L		83	68 - 122	1	18

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*38 - 134*

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

Lab Sample ID: 380-97742-F-1 MS
Matrix: Water
Analysis Batch: 448672

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
Gasoline Range Organics (C4-C13)	<10		400	326		ug/L		81	68 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*38 - 134*

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

Lab Sample ID: MB 570-449992/1-A
Matrix: Water
Analysis Batch: 453611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449992

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25		ug/L		06/11/24 20:06	06/22/24 23:22	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		06/11/24 20:06	06/22/24 23:22	1
C8-C18	<25		25		ug/L		06/11/24 20:06	06/22/24 23:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*105*		*60 - 130*	*06/11/24 20:06*	*06/22/24 23:22*	*1*

Lab Sample ID: LCS 570-449992/2-A
Matrix: Water
Analysis Batch: 453611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449992

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28			1600	1550		ug/L		97	56 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*102*		*60 - 130*

Lab Sample ID: LCSD 570-449992/3-A
Matrix: Water
Analysis Batch: 453611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 449992

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			1600	1610		ug/L		100	56 - 127	4	23

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*104*		*60 - 130*

Lab Sample ID: MRL 570-449992/4-A
Matrix: Water
Analysis Batch: 453611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449992

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28			0.0200	0.0272		mg/L		136	50 - 150

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

Lab Sample ID: MRL 570-449992/4-A
Matrix: Water
Analysis Batch: 453611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449992

Surrogate	MRL %Recovery	MRL Qualifier	Limits
n-Octacosane (Surr)	103		60 - 130

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Lab Sample ID: 118762-B1
Matrix: BlankMatrix
Analysis Batch: O-45098

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-45098_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Acenaphthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Biphenyl	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Chrysene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/11/24 00:00	06/24/24 23:35	1
Fluoranthene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Fluorene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Naphthalene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Perylene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Phenanthrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1
Pyrene	ND		0.005	0.001	µg/L		06/11/24 00:00	06/24/24 23:35	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	86		27 - 133	06/11/24 00:00	06/24/24 23:35	1
(d10-Phenanthrene)	91		43 - 129	06/11/24 00:00	06/24/24 23:35	1
(d12-Chrysene)	94		52 - 144	06/11/24 00:00	06/24/24 23:35	1
(d12-Perylene)	107		36 - 161	06/11/24 00:00	06/24/24 23:35	1
(d8-Naphthalene)	81		25 - 125	06/11/24 00:00	06/24/24 23:35	1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 118762-BS1
Matrix: BlankMatrix
Analysis Batch: O-45098

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-45098_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			0.5	0.382		µg/L		76	31 - 128		
1-Methylphenanthrene			0.5	0.503		µg/L		101	66 - 127		
2,3,5-Trimethylnaphthalene			0.5	0.469		µg/L		94	55 - 122		
2,6-Dimethylnaphthalene			0.5	0.416		µg/L		83	48 - 120		
2-Methylnaphthalene			0.5	0.387		µg/L		77	47 - 130		
Acenaphthene			0.5	0.428		µg/L		86	53 - 131		
Acenaphthylene			0.5	0.436		µg/L		87	43 - 140		
Anthracene			0.5	0.483		µg/L		97	58 - 135		
Benz[a]anthracene			0.5	0.71		µg/L		142	55 - 145		
Benzo[a]pyrene			0.5	0.45		µg/L		90	51 - 143		
Benzo[b]fluoranthene			0.5	0.702		µg/L		140	46 - 165		
Benzo[e]pyrene			0.5	0.426		µg/L		85	42 - 152		
Benzo[g,h,i]perylene			0.5	0.453		µg/L		91	63 - 133		
Benzo[k]fluoranthene			0.5	0.582		µg/L		116	56 - 145		
Biphenyl			0.5	0.415		µg/L		83	56 - 119		
Chrysene			0.5	0.59		µg/L		118	56 - 141		
Dibenz[a,h]anthracene			0.5	0.546		µg/L		109	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.428		µg/L		86	50 - 150		
Dibenzothiophene			0.5	0.498		µg/L		100	46 - 126		
Disalicylidenepropanediamine			50	47.7		µg/L		95	50 - 150		
Fluoranthene			0.5	0.541		µg/L		108	60 - 146		
Fluorene			0.5	0.455		µg/L		91	58 - 131		
Indeno[1,2,3-cd]pyrene			0.5	0.524		µg/L		105	50 - 151		
Naphthalene			0.5	0.363		µg/L		73	41 - 126		
Perylene			0.5	0.445		µg/L		89	48 - 141		
Phenanthrene			0.5	0.49		µg/L		98	67 - 127		
Pyrene			0.5	0.531		µg/L		106	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*85*		*27 - 133*
(d10-Phenanthrene)	*101*		*43 - 129*
(d12-Chrysene)	*75*		*52 - 144*
(d12-Perylene)	*89*		*36 - 161*
(d8-Naphthalene)	*75*		*25 - 125*

Lab Sample ID: 118762-BS2
Matrix: BlankMatrix
Analysis Batch: O-45098

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45098_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.387		µg/L		77	31 - 128	1	30
1-Methylphenanthrene			0.5	0.497		µg/L		99	66 - 127	2	30
2,3,5-Trimethylnaphthalene			0.5	0.453		µg/L		91	55 - 122	3	30
2,6-Dimethylnaphthalene			0.5	0.426		µg/L		85	48 - 120	2	30
2-Methylnaphthalene			0.5	0.39		µg/L		78	47 - 130	1	30
Acenaphthene			0.5	0.431		µg/L		86	53 - 131	0	30
Acenaphthylene			0.5	0.442		µg/L		88	43 - 140	1	30
Anthracene			0.5	0.415		µg/L		83	58 - 135	16	30

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 118762-BS2
Matrix: BlankMatrix
Analysis Batch: O-45098

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45098_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benz[a]anthracene			0.5	0.69		µg/L		138	55 - 145	3	30
Benzo[a]pyrene			0.5	0.449		µg/L		90	51 - 143	0	30
Benzo[b]fluoranthene			0.5	0.681		µg/L		136	46 - 165	3	30
Benzo[e]pyrene			0.5	0.433		µg/L		87	42 - 152	2	30
Benzo[g,h,i]perylene			0.5	0.468		µg/L		94	63 - 133	3	30
Benzo[k]fluoranthene			0.5	0.61		µg/L		122	56 - 145	5	30
Biphenyl			0.5	0.409		µg/L		82	56 - 119	1	30
Chrysene			0.5	0.573		µg/L		115	56 - 141	3	30
Dibenz[a,h]anthracene			0.5	0.527		µg/L		105	55 - 150	4	30
Dibenzo[a,l]pyrene			0.5	0.376		µg/L		75	50 - 150	14	30
Dibenzothiophene			0.5	0.483		µg/L		97	46 - 126	3	30
Disalicylidenepropanediamine			50	47.5		µg/L		95	50 - 150	0	30
Fluoranthene			0.5	0.53		µg/L		106	60 - 146	2	30
Fluorene			0.5	0.446		µg/L		89	58 - 131	2	30
Indeno[1,2,3-cd]pyrene			0.5	0.535		µg/L		107	50 - 151	2	30
Naphthalene			0.5	0.373		µg/L		75	41 - 126	3	30
Perylene			0.5	0.453		µg/L		91	48 - 141	2	30
Phenanthrene			0.5	0.484		µg/L		97	67 - 127	1	30
Pyrene			0.5	0.502		µg/L		100	54 - 156	6	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*82*		*27 - 133*
(d10-Phenanthrene)	*95*		*43 - 129*
(d12-Chrysene)	*75*		*52 - 144*
(d12-Perylene)	*91*		*36 - 161*
(d8-Naphthalene)	*72*		*25 - 125*

GC VOA

Analysis Batch: 448672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-98637-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015B GRO LL	
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	8015B GRO LL	
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015B GRO LL	
380-98637-5	TB:MOANALUA WELLS (331-223-TP202)	Total/NA	Water	8015B GRO LL	
380-98637-7	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	8015B GRO LL	
380-98637-8	TB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	8015B GRO LL	
MB 570-448672/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-448672/4	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-448672/5	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-448672/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-97742-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B GRO LL	
380-97742-F-1 MS	Matrix Spike	Total/NA	Water	8015B GRO LL	

GC Semi VOA

Prep Batch: 449992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-98637-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	3510C	
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	3510C	
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	3510C	
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	3510C	
MB 570-449992/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-449992/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-449992/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MRL 570-449992/4-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 453611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-98637-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015B	449992
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015B	449992
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	8015B	449992
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015B	449992
MB 570-449992/1-A	Method Blank	Total/NA	Water	8015B	449992
LCS 570-449992/2-A	Lab Control Sample	Total/NA	Water	8015B	449992
LCSD 570-449992/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	449992
MRL 570-449992/4-A	Lab Control Sample	Total/NA	Water	8015B	449992

Subcontract

Analysis Batch: O-45098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-98637-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45098_P
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45098_P
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45098_P
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45098_P
118762-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45098_P
118762-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45098_P

Subcontract (Continued)

Analysis Batch: O-45098 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
118762-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45098_P

Prep Batch: O-45098_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-98637-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	EPA_625	
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA_625	
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	EPA_625	
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	EPA_625	
118762-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
118762-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
118762-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-98637-2
SDG: 625, 8015

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-98637-1

Date Collected: 06/04/24 11:21
Date Received: 06/06/24 10:02

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 22:31
Total/NA	Prep	3510C			449992	TR8L	EET CAL 4	06/11/24 20:06
Total/NA	Analysis	8015B		1	453611	SP9M	EET CAL 4	06/23/24 00:24
Total/NA	Prep	EPA_625		1	O-45098_P			06/11/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45098	YC		06/25/24 04:56

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-98637-2

Date Collected: 06/04/24 12:00
Date Received: 06/06/24 10:02

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449992	TR8L	EET CAL 4	06/11/24 20:06
Total/NA	Analysis	8015B		1	453611	SP9M	EET CAL 4	06/23/24 00:45
Total/NA	Prep	EPA_625		1	O-45098_P			06/11/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45098	YC		06/25/24 06:44

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-98637-3

Date Collected: 06/04/24 12:25
Date Received: 06/06/24 10:02

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 23:24
Total/NA	Prep	3510C			449992	TR8L	EET CAL 4	06/11/24 20:06
Total/NA	Analysis	8015B		1	453611	SP9M	EET CAL 4	06/23/24 01:06
Total/NA	Prep	EPA_625		1	O-45098_P			06/11/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45098	YC		06/25/24 08:31

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-98637-4

Date Collected: 06/04/24 11:40
Date Received: 06/06/24 10:02

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 22:58
Total/NA	Prep	3510C			449992	TR8L	EET CAL 4	06/11/24 20:06
Total/NA	Analysis	8015B		1	453611	SP9M	EET CAL 4	06/23/24 01:26
Total/NA	Prep	EPA_625		1	O-45098_P			06/11/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45098	YC		06/25/24 10:19

Lab Chronicle

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

Job ID: 380-98637-2
SDG: 625, 8015

Client Sample ID: TB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-98637-5
Matrix: Water
Date Collected: 06/04/24 11:21
Date Received: 06/06/24 10:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 17:56

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-98637-7
Matrix: Water
Date Collected: 06/04/24 12:25
Date Received: 06/06/24 10:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 18:23

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-98637-8
Matrix: Water
Date Collected: 06/04/24 11:40
Date Received: 06/06/24 10:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 18:49

Laboratory References:

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

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 [SUBCONTRACT]

Job ID: 380-98637-2
SDG: 625, 8015

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	9257304	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	02-02-25
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 [SUBCONTRACT]

Job ID: 380-98637-2
SDG: 625, 8015

Method	Method Description	Protocol	Laboratory
8015B GRO LL	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	EET CAL 4
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

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

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 [SUBCONTRACT]

Job ID: 380-98637-2
SDG: 625, 8015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-98637-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	06/04/24 11:21	06/06/24 10:02	HI0000331
380-98637-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	06/04/24 12:00	06/06/24 10:02	HI0000331
380-98637-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	06/04/24 12:25	06/06/24 10:02	HI0000331
380-98637-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	06/04/24 11:40	06/06/24 10:02	HI0000331
380-98637-5	TB:MOANALUA WELLS (331-223-TP202)	Water	06/04/24 11:21	06/06/24 10:02	HI0000331
380-98637-7	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	06/04/24 12:25	06/06/24 10:02	HI0000331
380-98637-8	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Water	06/04/24 11:40	06/06/24 10:02	HI0000331

June 28, 2024

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

Project Name: RED-HILL Project # 38001111 Job # 380-98637-1
Physis Project ID: 1407003-516

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 6/7/2024. 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: 1407003-516

RED-HILL Project # 38001111 Job # 380-98637-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
118763	MOANALUA WELLS	331-223-TP202 (380-98637-1)	6/4/2024	11:21	Samplewater	Not Specified
118764	AIEA GULCH WELLS PUMP 2	331-202-TP072 (380-98637-2)	6/4/2024	12:00	Samplewater	Not Specified
118765	AIEA WELLS PUMPS 1&2 (260)	331-203-TP400 (380-98637-3)	6/4/2024	12:25	Samplewater	Not Specified
118766	HALAWA WELLS UNITS 1 & 2	331-206-TP065 (380-98637-4)	6/4/2024	11:40	Samplewater	Not Specified

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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

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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 MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) 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.

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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.

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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

PHYSIS Project ID: 1407003-516
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-98637-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118763-R1	**MOANALUA WELLS 331-223-TP202**	**Matrix:**	**Samplewater**				**Sampled:**	**04-Jun-24**	**11:21**	**Received:**	**07-Jun-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45098	11-Jun-24	25-Jun-24
Sample ID: 118764-R1	**AIEA GULCH WELLS PUMP 2 331-20**	**Matrix:**	**Samplewater**				**Sampled:**	**04-Jun-24**	**12:00**	**Received:**	**07-Jun-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45098	11-Jun-24	25-Jun-24
Sample ID: 118765-R1	**AIEA WELLS PUMPS 1&2 (260) 331-**	**Matrix:**	**Samplewater**				**Sampled:**	**04-Jun-24**	**12:25**	**Received:**	**07-Jun-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45098	11-Jun-24	25-Jun-24
Sample ID: 118766-R1	**HALAWA WELLS UNITS 1 & 23 331-2**	**Matrix:**	**Samplewater**				**Sampled:**	**04-Jun-24**	**11:40**	**Received:**	**07-Jun-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45098	11-Jun-24	25-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118763-R1	**MOANALUA WELLS 331-223-TP202**	**Matrix: Samplewater**					**Sampled: 04-Jun-24 11:21**			**Received: 07-Jun-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	52	1			Total		O-45098	11-Jun-24	25-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	58	1			Total		O-45098	11-Jun-24	25-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	69	1			Total		O-45098	11-Jun-24	25-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	104	1			Total		O-45098	11-Jun-24	25-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	46	1			Total		O-45098	11-Jun-24	25-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24

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-45098	11-Jun-24	25-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118764-R1	**AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater**						**Sampled:**	**04-Jun-24 12:00**		**Received:**	**07-Jun-24**
(d10-Acenaphthene)	EPA 625.1	% Recovery	69	1			Total		O-45098	11-Jun-24	25-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	77	1			Total		O-45098	11-Jun-24	25-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	68	1			Total		O-45098	11-Jun-24	25-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	93	1			Total		O-45098	11-Jun-24	25-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	61	1			Total		O-45098	11-Jun-24	25-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24

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-45098	11-Jun-24	25-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118765-R1	**AIEA WELLS PUMPS 1&2 (260) 331-**	**Matrix: Samplewater**					**Sampled:**	**04-Jun-24 12:25**		**Received:**	**07-Jun-24**
(d10-Acenaphthene)	EPA 625.1	% Recovery	43	1			Total		O-45098	11-Jun-24	25-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	50	1			Total		O-45098	11-Jun-24	25-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	56	1			Total		O-45098	11-Jun-24	25-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	74	1			Total		O-45098	11-Jun-24	25-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	40	1			Total		O-45098	11-Jun-24	25-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	0.0113	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Anthracene	EPA 625.1	µg/L	0.00852	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	0.27	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	0.0999	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	0.213	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	0.0857	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	0.0489	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	0.189	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Chrysene	EPA 625.1	µg/L	0.199	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	0.0269	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	0.0172	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24

PHYSIS Project ID: 1407003-516
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-98637-1

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	0.324	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	0.0786	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Perylene	EPA 625.1	µg/L	0.0361	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Phenanthrene	EPA 625.1	µg/L	0.0231	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Pyrene	EPA 625.1	µg/L	0.356	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118766-R1	**HALAWA WELLS UNITS 1 & 23 331-2 Matrix: Samplewater**						**Sampled: 04-Jun-24 11:40**			**Received:**	**07-Jun-24**
(d10-Acenaphthene)	EPA 625.1	% Recovery	68	1			Total		O-45098	11-Jun-24	25-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	75	1			Total		O-45098	11-Jun-24	25-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	65	1			Total		O-45098	11-Jun-24	25-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	87	1			Total		O-45098	11-Jun-24	25-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	59	1			Total		O-45098	11-Jun-24	25-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	0.0182	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24

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-45098	11-Jun-24	25-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45098	11-Jun-24	25-Jun-24

QUALITY CONTROL REPORT

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118762-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**				**Received:**			
		Method: EPA 625.1				Batch ID: O-45098		Prepared: 11-Jun-24			Analyzed: 24-Jun-24			
Disalicylidenepropanediamine	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 118762-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**				**Received:**			
		Method: EPA 625.1				Batch ID: O-45098		Prepared: 11-Jun-24			Analyzed: 25-Jun-24			
Disalicylidenepropanediamine	Total	47.7	1	0.05	0.1	µg/L	50	0	95	50 - 150% PASS				
Sample ID: 118762-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**				**Received:**			
		Method: EPA 625.1				Batch ID: O-45098		Prepared: 11-Jun-24			Analyzed: 25-Jun-24			
Disalicylidenepropanediamine	Total	47.5	1	0.05	0.1	µg/L	50	0	95	50 - 150% PASS		0	30 PASS	

PHYSIS Project ID: 1407003-516
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-98637-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118762-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**					**Received:**	
	Method: EPA 625.1					Batch ID: O-45098		Prepared: 11-Jun-24				Analyzed: 24-Jun-24	
(d10-Acenaphthene)	Total	86	1			% Recovery	100	86	27 - 133%	PASS			
(d10-Phenanthrene)	Total	91	1			% Recovery	100	91	43 - 129%	PASS			
(d12-Chrysene)	Total	94	1			% Recovery	100	94	52 - 144%	PASS			
(d12-Perylene)	Total	107	1			% Recovery	100	107	36 - 161%	PASS			
(d8-Naphthalene)	Total	81	1			% Recovery	100	81	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							

PHYSIS Project ID: 1407003-516
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Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118762-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
	Method: EPA 625.1					Batch ID: O-45098		Prepared: 11-Jun-24				Analyzed: 25-Jun-24	
(d10-Acenaphthene)	Total	85	1			% Recovery	100	0	85	27 - 133%	PASS		
(d10-Phenanthrene)	Total	101	1			% Recovery	100	0	101	43 - 129%	PASS		
(d12-Chrysene)	Total	75	1			% Recovery	100	0	75	52 - 144%	PASS		
(d12-Perylene)	Total	89	1			% Recovery	100	0	89	36 - 161%	PASS		
(d8-Naphthalene)	Total	75	1			% Recovery	100	0	75	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.382	1	0.001	0.005	µg/L	0.5	0	76	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.503	1	0.001	0.005	µg/L	0.5	0	101	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.416	1	0.001	0.005	µg/L	0.5	0	83	48 - 120%	PASS		
2-Methylnaphthalene	Total	0.387	1	0.001	0.005	µg/L	0.5	0	77	47 - 130%	PASS		
Acenaphthene	Total	0.428	1	0.001	0.005	µg/L	0.5	0	86	53 - 131%	PASS		
Acenaphthylene	Total	0.436	1	0.001	0.005	µg/L	0.5	0	87	43 - 140%	PASS		
Anthracene	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	58 - 135%	PASS		
Benz[a]anthracene	Total	0.71	1	0.001	0.005	µg/L	0.5	0	142	55 - 145%	PASS		
Benzo[a]pyrene	Total	0.45	1	0.001	0.005	µg/L	0.5	0	90	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	0.702	1	0.001	0.005	µg/L	0.5	0	140	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.426	1	0.001	0.005	µg/L	0.5	0	85	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	0.582	1	0.001	0.005	µg/L	0.5	0	116	56 - 145%	PASS		
Biphenyl	Total	0.415	1	0.001	0.005	µg/L	0.5	0	83	56 - 119%	PASS		
Chrysene	Total	0.59	1	0.001	0.005	µg/L	0.5	0	118	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	0.546	1	0.001	0.005	µg/L	0.5	0	109	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.428	1	0.001	0.005	µg/L	0.5	0	86	50 - 150%	PASS		

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Dibenzothiophene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	46 - 126%	PASS			
Fluoranthene	Total	0.541	1	0.001	0.005	µg/L	0.5	0	108	60 - 146%	PASS			
Fluorene	Total	0.455	1	0.001	0.005	µg/L	0.5	0	91	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	50 - 151%	PASS			
Naphthalene	Total	0.363	1	0.001	0.005	µg/L	0.5	0	73	41 - 126%	PASS			
Perylene	Total	0.445	1	0.001	0.005	µg/L	0.5	0	89	48 - 141%	PASS			
Phenanthrene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	67 - 127%	PASS			
Pyrene	Total	0.531	1	0.001	0.005	µg/L	0.5	0	106	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118762-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**		
	Method: EPA 625.1					Batch ID: O-45098		Prepared: 11-Jun-24				Analyzed: 25-Jun-24		
(d10-Acenaphthene)	Total	82	1			% Recovery	100	0	82	27 - 133%	PASS	4	30	PASS
(d10-Phenanthrene)	Total	95	1			% Recovery	100	0	95	43 - 129%	PASS	6	30	PASS
(d12-Chrysene)	Total	75	1			% Recovery	100	0	75	52 - 144%	PASS	0	30	PASS
(d12-Perylene)	Total	91	1			% Recovery	100	0	91	36 - 161%	PASS	2	30	PASS
(d8-Naphthalene)	Total	72	1			% Recovery	100	0	72	25 - 125%	PASS	4	30	PASS
1-Methylnaphthalene	Total	0.387	1	0.001	0.005	µg/L	0.5	0	77	31 - 128%	PASS	1	30	PASS
1-Methylphenanthrene	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	66 - 127%	PASS	2	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	55 - 122%	PASS	3	30	PASS
2,6-Dimethylnaphthalene	Total	0.426	1	0.001	0.005	µg/L	0.5	0	85	48 - 120%	PASS	2	30	PASS
2-Methylnaphthalene	Total	0.39	1	0.001	0.005	µg/L	0.5	0	78	47 - 130%	PASS	1	30	PASS
Acenaphthene	Total	0.431	1	0.001	0.005	µg/L	0.5	0	86	53 - 131%	PASS	0	30	PASS
Acenaphthylene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	43 - 140%	PASS	1	30	PASS
Anthracene	Total	0.415	1	0.001	0.005	µg/L	0.5	0	83	58 - 135%	PASS	16	30	PASS
Benz[a]anthracene	Total	0.69	1	0.001	0.005	µg/L	0.5	0	138	55 - 145%	PASS	3	30	PASS
Benzo[a]pyrene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	51 - 143%	PASS	0	30	PASS
Benzo[b]fluoranthene	Total	0.681	1	0.001	0.005	µg/L	0.5	0	136	46 - 165%	PASS	3	30	PASS
Benzo[e]pyrene	Total	0.433	1	0.001	0.005	µg/L	0.5	0	87	42 - 152%	PASS	2	30	PASS
Benzo[g,h,i]perylene	Total	0.468	1	0.001	0.005	µg/L	0.5	0	94	63 - 133%	PASS	3	30	PASS
Benzo[k]fluoranthene	Total	0.61	1	0.001	0.005	µg/L	0.5	0	122	56 - 145%	PASS	5	30	PASS
Biphenyl	Total	0.409	1	0.001	0.005	µg/L	0.5	0	82	56 - 119%	PASS	1	30	PASS
Chrysene	Total	0.573	1	0.001	0.005	µg/L	0.5	0	115	56 - 141%	PASS	3	30	PASS
Dibenz[a,h]anthracene	Total	0.527	1	0.001	0.005	µg/L	0.5	0	105	55 - 150%	PASS	4	30	PASS
Dibenzo[a,l]pyrene	Total	0.376	1	0.001	0.005	µg/L	0.5	0	75	50 - 150%	PASS	14	30	PASS

PHYSIS Project ID: 1407003-516
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-98637-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Dibenzothiophene	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	46 - 126%	PASS	3	30	PASS	
Fluoranthene	Total	0.53	1	0.001	0.005	µg/L	0.5	0	106	60 - 146%	PASS	2	30	PASS	
Fluorene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	58 - 131%	PASS	2	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.535	1	0.001	0.005	µg/L	0.5	0	107	50 - 151%	PASS	2	30	PASS	
Naphthalene	Total	0.373	1	0.001	0.005	µg/L	0.5	0	75	41 - 126%	PASS	3	30	PASS	
Perylene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	48 - 141%	PASS	2	30	PASS	
Phenanthrene	Total	0.484	1	0.001	0.005	µg/L	0.5	0	97	67 - 127%	PASS	1	30	PASS	
Pyrene	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	54 - 156%	PASS	6	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 118763

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3649	2.4171	1111	Anthracene-D10-	1517-22-2	95
62.9523	2.1719	998	Heptacosane	593-49-7	96
27.4405	0.5583	257	Diethyl Phthalate	84-66-2	97
10.6219	0.4942	227	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	90
59.9459	0.4631	213	5-Amino-2-methyl-2H-tetrazole	1553840	80
55.3234	0.3783	174	Benzyl butyl phthalate	85-68-7	95
11.0080	0.3643	167	Pentane, 1,3-dibromo-	42474-20-4	92
10.2670	0.3451	159	Hydroperoxide, 1-ethylbutyl	24254-56-6	80

Concentration estimated using the response for Anthracene-d10

Sample ID: 118764

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.9321	2.0168	1111	Anthracene-D10-	1517-22-2	96
23.5718	0.9891	545	Bromine	7726-95-6	83
10.6204	0.5636	311	Oxalic acid, cyclohexyl butyl ester	1000309-30-5	90
27.4414	0.5217	287	Diethyl Phthalate	84-66-2	99
11.0064	0.3313	183	Pentane, 1,3-dibromo-	42474-20-4	96
55.3170	0.3250	179	Benzyl butyl phthalate	85-68-7	93
32.0701	0.2567	141	Benzoic acid, 2-ethylhexyl ester	5444-75-7	95

Concentration estimated using the response for Anthracene-d10

Sample ID: 118765

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3597	1.6597	1111	Anthracene-D10-	1719-06-8	95
47.6003	1.4453	968	Pyrene	129-00-0	98
62.9531	1.2735	853	Hexacosane	630-01-3	94
59.2102	0.8248	552	Triphenylene	217-59-4	94
70.7726	0.6153	412	Benzo[a]pyrene	50-32-8	95
70.3734	0.5603	375	Benzo[e]pyrene	192-97-2	96
55.3117	0.5262	352	Benzyl butyl phthalate	85-68-7	92
10.6222	0.4793	321	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	90
27.4424	0.4075	273	Diethyl Phthalate	84-66-2	97
10.2662	0.3723	249	Hydroperoxide, 1-ethylbutyl	24254-56-6	81
80.7802	0.3573	239	Dibenzo[def,mno]chrysene	191-26-4	86
8.6073	0.3356	225	Butane, 2,3-dichloro-2-methyl-	507-45-9	91
79.0861	0.3205	215	Dibenzo[def,mno]chrysene	191-26-4	87
57.0359	0.3069	205	Cyclopenta[cd]pyrene	27208-37-3	86
11.0081	0.2704	181	Pentane, 1,3-dibromo-	42474-20-4	95
56.7044	0.1962	131	Benzo[b]naphtho[1,2-d]thiophene	205-43-6	81
50.1628	0.1852	124	Pyrene, 1-methyl-	2381-21-7	86
50.1614	0.1663	111	11H-Benzo[b]fluorene	243-17-4	85
10.9676	0.1649	110	3,3-Diethoxy-1-propyne	10160-87-9	83

Concentration estimated using the response for Anthracene-d10

Sample ID: 118766

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3588	2.1176	1111	Anthracene-D10-	1719-06-8	96
61.4513	9.2459	4851	Bis(2-ethylhexyl) phthalate	117-81-7	99
27.4364	1.0078	529	Diethyl Phthalate	84-66-2	98
10.7327	0.8168	429	5-Amino-2-methyl-2H-tetrazole	1553840	90
10.6216	0.7288	382	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	88
55.3174	0.6411	336	Benzyl butyl phthalate	85-68-7	94
38.1296	0.6019	316	1,2-Benzenedicarboxylic acid, bis(2-methylpropyl) ester	84-69-5	97
10.2667	0.5157	271	Hydroperoxide, 1-ethylbutyl	24254-56-6	82
32.0718	0.2935	154	Benzoic acid, 2-ethylhexyl ester	5444-75-7	97
73.9573	0.2731	143	Heneicosane	629-94-7	85
10.9672	0.2592	136	3,3-Diethoxy-1-propyne	10160-87-9	86
10.3910	0.2361	124	2-Methylbutanoic anhydride	1468-39-9	86

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_45098

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.9332	2.7192	1111	Anthracene-D10-	1719-06-8	94
10.6219	0.7497	306	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	91
10.2662	0.5237	214	Hydroperoxide, 1-ethylbutyl	24254-56-6	80
10.3908	0.2537	104	2-Methylbutanoic anhydride	1468-39-9	85

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-129560.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-98637-1
Address: 1904 Wright Circle, ,	Due Date Requested: 6/25/2024			Preservation Codes: -
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			Other:
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MOANALUA WELLS (331-223-TP202) (380-98637-1)	6/4/24	11:21 Hawaiian		Water			X	2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-98637-2)	6/4/24	12:00 Hawaiian		Water			X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-98637-3)	6/4/24	12:25 Hawaiian		Water			X	2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-98637-4)	6/4/24	11:40 Hawaiian		Water			X	2	See Attached Instructions

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.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:			Method of Shipment:	
Relinquished by:	Date/Time: 6/7/24 1057	Company EEA	Received by:	Date/Time: 6/7/24 1057	Company PHYSIS		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:	

Ver: 04/02/2024

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Sample Receipt Summary

Project Iteration ID: 1407003-516
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111 Job # 380-98637-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Receiving Info

1. Initials Received By: YC
2. Date Received: 6/7/24
3. Time Received: 1057
4. Client Name: eurofins
5. Courier Information: (Please circle)
   - Client
   - UPS
   - Area Fast
   - DRS
   - FedEx
   - GSO/GLS
   - Ontrac
   - PAMS
   - PHYSIS Driver:
     i. Start Time:_____ iii. Total Mileage:_____
     ii. End Time:_____ 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): -2.3 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: [signature]

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

eurofins | Environment Testing America

Client Information	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27984-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

380-98637 COC

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges: C10-C24/C24-C36/C8-C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	A	Q		Y	N		
MOANALUA WELLS	4-Jun-2024	1121	G	Water			2	4	2	2				chlorinated
AIEA GULCH WELLS PUMP2	4-Jun-2024	1200	G	Water			2	4	2	2				chlorinated
AIEA WELLS PUMPS 1&2 (260)	4-Jun-2024	1225	G	Water			2	4	2	2				
HALAWA WELLS UNITS 1&2	4-Jun-2024	1140	G	Water			2	4	2	2				
TB MOANALUA WELLS	4-Jun-2024	1121	G	Water				2						
TB AIEA GULCH WELLS PUMP2	4-Jun-2024	1200	G	Water				2						
TB AIEA WELLS PUMPS 1&2 (260)	4-Jun-2024	1225	G	Water				2						
TB HALAWA WELLS UNITS 1&2	4-Jun-2024	1140	G	Water				2						

4 of 4 REC. EMPTY
ONLY REC. 3 VIALS
1 of 2 REC. BROKEN

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/5/24 1100	HBWS	2	6/6/24 1002	GEL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		6.3 IR 3.3-0.1 = 3.2 GEL

ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 05JUN24
ACTWGT: 62.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
INV:
PO: DEPT:

583J3/6CA9/9AE3

FedEx Express

J4220240326010v

1 of 8

THU - 06 JUN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7767 1826 3645
MASTER

WM ONTA

91768
CA-US ONT

631A 3-3-0-1 = 3-2 OK

1m 6/6/24 1020

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ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 05JUN24
ACTWGT: 62.00 LB
CAD: 258050552/INET4535

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TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
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583J3/6CA9/9AE3

FedEx Express

J2420240326011uv

3 of 8

MPS# 0263 7767 1826 3667
Mstr# 7767 1826 3645

THU - 06 JUN 10:30A
PRIORITY OVERNIGHT

0201

91768
ONT
CA-US

WM ONTA

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631A 3-8-01 =3.7 ~~6~~5

6/6/24

10L2

ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 05JUN24
ACTWGT: 62.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
INV:
PO: DEPT:

583J3/6CA9/9AE3

FedEx Express

J2420240326OOuv

2 of 8
MPS# 0263 7767 1826 3656
Mstr# 7767 1826 3645

THU - 06 JUN 10:30A
PRIORITY OVERNIGHT

0201

91768
ONT

WM ONTA

CA-US

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6316A 3-1-01 -30 6DC

6/6/24 1022

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-98637-2
SDG Number: 625, 8015

Login Number: 98637
List Number: 1
Creator: Sanchez Velasquez, Gustavo

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	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: 380-98637-2
SDG Number: 625, 8015

Login Number: 98637
List Number: 2
Creator: Khana, Piyush

List Source: Eurofins Calscience
List Creation: 06/06/24 05:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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	1.6
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

RED-HILL [SUBCONTRACT]
625, 8015
RUSH Weekly Red Hill

JOB NUMBER

380-95821-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

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

Rachelle Arada

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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-95821-1
SDG: 625, 8015

Glossary

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

Job Narrative
380-95821-1

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 5/15/2024 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.8°C, 3.3°C and 5.3°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.

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: The following samples were re-prepared outside of preparation holding time due to failing method blank in initial extraction: MOANALUA WELLS (380-95821-1), AIEA GULCH WELLS PUMP 2 (380-95821-2), AIEA WELLS PUMPS 1&2 (260) P2 (380-95821-3) and HALAWA WELLS UNITS 1 & 2 P1 (380-95821-4). Data excluded due to this failure.

Detection Summary

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

Job ID: 380-95821-1
SDG: 625, 8015

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-95821-1
PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-95821-2
PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95821-3
PWSID Number: HI0000331

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benz[a]anthracene	0.0077		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Benzo[b]fluoranthene	0.0104		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Benzo[k]fluoranthene	0.00546		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Chrysene	0.00677		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Fluoranthene	0.00841		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA
Pyrene	0.00978		0.005	0.001	µg/L	1		625 PAH Physis LL (EAL) + TICs	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95821-4
PWSID Number: HI0000331

No Detections.

Client Sample ID: TB MOANALUA WELLS — Lab Sample ID: 380-95821-5

No Detections.

Client Sample ID: TB AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-95821-6

No Detections.

Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95821-7

No Detections.

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95821-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-95821-1
Date Collected: 05/13/24 09:55
Matrix: Drinking Water
Date Received: 05/15/24 10:20
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			05/24/24 18:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*38 - 134*		*05/24/24 18:13*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Acenaphthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Biphenyl	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Chrysene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/16/24 00:00	06/10/24 00:49	1
Fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Fluorene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Naphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Phenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1
Pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 00:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*86*		*27 - 133*	*05/16/24 00:00*	*06/10/24 00:49*	*1*
(d10-Phenanthrene)	*89*		*43 - 129*	*05/16/24 00:00*	*06/10/24 00:49*	*1*
(d12-Chrysene)	*103*		*52 - 144*	*05/16/24 00:00*	*06/10/24 00:49*	*1*
(d12-Perylene)	*93*		*36 - 161*	*05/16/24 00:00*	*06/10/24 00:49*	*1*
(d8-Naphthalene)	*79*		*25 - 125*	*05/16/24 00:00*	*06/10/24 00:49*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-95821-2
Date Collected: 05/13/24 10:50
Matrix: Drinking Water
Date Received: 05/15/24 10:20
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			05/24/24 16:55	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 05/13/24 10:50
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95821-2

Matrix: Drinking Water
PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*104*		*38 - 134*		*05/24/24 16:55*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Acenaphthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Biphenyl	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Chrysene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/16/24 00:00	06/10/24 02:37	1
Fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Fluorene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Naphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Phenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1
Pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 02:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	*84*		*27 - 133*	*05/16/24 00:00*	*06/10/24 02:37*	*1*
(d10-Phenanthrene)	*91*		*43 - 129*	*05/16/24 00:00*	*06/10/24 02:37*	*1*
(d12-Chrysene)	*106*		*52 - 144*	*05/16/24 00:00*	*06/10/24 02:37*	*1*
(d12-Perylene)	*91*		*36 - 161*	*05/16/24 00:00*	*06/10/24 02:37*	*1*
(d8-Naphthalene)	*76*		*25 - 125*	*05/16/24 00:00*	*06/10/24 02:37*	*1*

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

Date Collected: 05/13/24 11:13
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95821-3

Matrix: Drinking Water
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			05/24/24 18:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*110*		*38 - 134*		*05/24/24 18:39*	*1*

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

Lab Sample ID: 380-95821-3

Date Collected: 05/13/24 11:13
Matrix: Drinking Water
Date Received: 05/15/24 10:20
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Acenaphthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Benz[a]anthracene	**0.0077**		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Benzo[b]fluoranthene	**0.0104**		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Benzo[k]fluoranthene	**0.00546**		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Biphenyl	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Chrysene	**0.00677**		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/16/24 00:00	06/10/24 04:25	1
Fluoranthene	**0.00841**		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Fluorene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Naphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Phenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1
Pyrene	**0.00978**		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 04:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*91*		*27 - 133*	*05/16/24 00:00*	*06/10/24 04:25*	*1*
(d10-Phenanthrene)	*95*		*43 - 129*	*05/16/24 00:00*	*06/10/24 04:25*	*1*
(d12-Chrysene)	*111*		*52 - 144*	*05/16/24 00:00*	*06/10/24 04:25*	*1*
(d12-Perylene)	*93*		*36 - 161*	*05/16/24 00:00*	*06/10/24 04:25*	*1*
(d8-Naphthalene)	*84*		*25 - 125*	*05/16/24 00:00*	*06/10/24 04:25*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-95821-4

Date Collected: 05/13/24 10:21
Matrix: Drinking Water
Date Received: 05/15/24 10:20
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			05/24/24 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*38 - 134*		*05/24/24 19:05*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-95821-4

Date Collected: 05/13/24 10:21
Matrix: Drinking Water
Date Received: 05/15/24 10:20
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Acenaphthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Biphenyl	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Chrysene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/16/24 00:00	06/10/24 06:13	1
Fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Fluorene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Naphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Phenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1
Pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/10/24 06:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*89*		*27 - 133*	*05/16/24 00:00*	*06/10/24 06:13*	*1*
(d10-Phenanthrene)	*92*		*43 - 129*	*05/16/24 00:00*	*06/10/24 06:13*	*1*
(d12-Chrysene)	*112*		*52 - 144*	*05/16/24 00:00*	*06/10/24 06:13*	*1*
(d12-Perylene)	*92*		*36 - 161*	*05/16/24 00:00*	*06/10/24 06:13*	*1*
(d8-Naphthalene)	*79*		*25 - 125*	*05/16/24 00:00*	*06/10/24 06:13*	*1*

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-95821-5

Date Collected: 05/13/24 09:55
Matrix: Water
Date Received: 05/15/24 10:20

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			05/24/24 15:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*38 - 134*		*05/24/24 15:10*	*1*

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-95821-6

Date Collected: 05/13/24 10:50
Matrix: Water
Date Received: 05/15/24 10:20

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			05/24/24 15:36	1

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-95821-6

Date Collected: 05/13/24 10:50
Matrix: Water
Date Received: 05/15/24 10:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		38 - 134		05/24/24 15:36	1

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

Lab Sample ID: 380-95821-7

Date Collected: 05/13/24 11:13
Matrix: Water
Date Received: 05/15/24 10:20

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			05/24/24 16:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		38 - 134		05/24/24 16:02	1

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

Lab Sample ID: 380-95821-8

Date Collected: 05/13/24 10:21
Matrix: Water
Date Received: 05/15/24 10:20

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			05/24/24 16:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		38 - 134		05/24/24 16:29	1

Surrogate Summary

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

Job ID: 380-95821-1
SDG: 625, 8015

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(38-134)
380-95821-1	MOANALUA WELLS	105
380-95821-2	AIEA GULCH WELLS PUMP 2	104
380-95821-2 MS	AIEA GULCH WELLS PUMP 2	112
380-95821-2 MSD	AIEA GULCH WELLS PUMP 2	111
380-95821-3	AIEA WELLS PUMPS 1&2 (260) P2	110
380-95821-4	HALAWA WELLS UNITS 1 & 2 P1	107

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(38-134)
380-95821-5	TB MOANALUA WELLS	100
380-95821-6	TB AIEA GULCH WELLS PUMP 2	93
380-95821-7	TB AIEA WELLS PUMPS 1&2 (260) P2	108
380-95821-8	TB HALAWA WELLS UNITS 1 & 2 P1	104
LCS 570-444093/4	Lab Control Sample	113
LCSD 570-444093/5	Lab Control Sample Dup	113
MB 570-444093/6	Method Blank	111
MRL 570-444093/7	Lab Control Sample	113

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
117951-B1	Method Blank	91	94	118	84	99
117951-BS1	Lab Control Sample	92	97	115	88	93
117951-BS2	Lab Control Sample Dup	94	97	109	91	94

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-95821-1
Project/Site: RED-HILL [SUBCONTRACT]
SDG: 625, 8015

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Acenapht (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)			
380-95821-1	MOANALUA WELLS	86	89	103	79	93			
380-95821-2	AIEA GULCH WELLS PUMP 2	84	91	106	76	91			
380-95821-3	AIEA WELLS PUMPS 1&2 (260) P2	91	95	111	84	93			
380-95821-4	HALAWA WELLS UNITS 1 & 2 P1	89	92	112	79	92			

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

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

Lab Sample ID: MB 570-444093/6
Matrix: Water
Analysis Batch: 444093

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			05/24/24 13:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*38 - 134*		*05/24/24 13:46*	*1*

Lab Sample ID: LCS 570-444093/4
Matrix: Water
Analysis Batch: 444093

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)			400	395		ug/L		99	78 - 120		

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

Lab Sample ID: LCSD 570-444093/5
Matrix: Water
Analysis Batch: 444093

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)			400	391		ug/L		98	78 - 120	1	10

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

Lab Sample ID: MRL 570-444093/7
Matrix: Water
Analysis Batch: 444093

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	12.9		ug/L		129	50 - 150		

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

Lab Sample ID: 380-95821-2 MS
Matrix: Drinking Water
Analysis Batch: 444093

Client Sample ID: AIEA GULCH WELLS PUMP 2
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		400	317		ug/L		79	68 - 122		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*38 - 134*

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

Lab Sample ID: 380-95821-2 MSD
Matrix: Drinking Water
Analysis Batch: 444093

Client Sample ID: AIEA GULCH WELLS PUMP 2
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		400	317		ug/L		79	68 - 122	0	18

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*38 - 134*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Lab Sample ID: 117951-B1
Matrix: BlankMatrix
Analysis Batch: O-45064

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-45064_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Acenaphthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Biphenyl	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Chrysene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/16/24 00:00	06/09/24 19:25	1
Fluoranthene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Fluorene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Naphthalene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Perylene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Phenanthrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1
Pyrene	ND		0.005	0.001	µg/L		05/16/24 00:00	06/09/24 19:25	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*91*		*27 - 133*	*05/16/24 00:00*	*06/09/24 19:25*	*1*
(d10-Phenanthrene)	*94*		*43 - 129*	*05/16/24 00:00*	*06/09/24 19:25*	*1*
(d12-Chrysene)	*118*		*52 - 144*	*05/16/24 00:00*	*06/09/24 19:25*	*1*
(d12-Perylene)	*99*		*36 - 161*	*05/16/24 00:00*	*06/09/24 19:25*	*1*
(d8-Naphthalene)	*84*		*25 - 125*	*05/16/24 00:00*	*06/09/24 19:25*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 117951-BS1
Matrix: BlankMatrix
Analysis Batch: O-45064

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-45064_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			0.5	0.467		µg/L		93	31 - 128		
1-Methylphenanthrene			0.5	0.553		µg/L		111	66 - 127		
2,3,5-Trimethylnaphthalene			0.5	0.489		µg/L		98	55 - 122		
2,6-Dimethylnaphthalene			0.5	0.456		µg/L		91	48 - 120		
2-Methylnaphthalene			0.5	0.468		µg/L		94	47 - 130		
Acenaphthene			0.5	0.478		µg/L		96	53 - 131		
Acenaphthylene			0.5	0.479		µg/L		96	43 - 140		
Anthracene			0.5	0.484		µg/L		97	58 - 135		
Benz[a]anthracene			0.5	0.52		µg/L		104	55 - 145		
Benzo[a]pyrene			0.5	0.473		µg/L		95	51 - 143		
Benzo[b]fluoranthene			0.5	0.5		µg/L		100	46 - 165		
Benzo[e]pyrene			0.5	0.489		µg/L		98	42 - 152		
Benzo[g,h,i]perylene			0.5	0.482		µg/L		96	63 - 133		
Benzo[k]fluoranthene			0.5	0.499		µg/L		100	56 - 145		
Biphenyl			0.5	0.478		µg/L		96	56 - 119		
Chrysene			0.5	0.498		µg/L		100	56 - 141		
Dibenz[a,h]anthracene			0.5	0.523		µg/L		105	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.252		µg/L		50	50 - 150		
Dibenzothiophene			0.5	0.511		µg/L		102	46 - 126		
Disalicylidenepropanediamine			50	48.6		µg/L		97	50 - 150		
Fluoranthene			0.5	0.511		µg/L		102	60 - 146		
Fluorene			0.5	0.491		µg/L		98	58 - 131		
Indeno[1,2,3-cd]pyrene			0.5	0.491		µg/L		98	50 - 151		
Naphthalene			0.5	0.461		µg/L		92	41 - 126		
Perylene			0.5	0.469		µg/L		94	48 - 141		
Phenanthrene			0.5	0.498		µg/L		100	67 - 127		
Pyrene			0.5	0.492		µg/L		98	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*92*		*27 - 133*
(d10-Phenanthrene)	*97*		*43 - 129*
(d12-Chrysene)	*115*		*52 - 144*
(d12-Perylene)	*93*		*36 - 161*
(d8-Naphthalene)	*88*		*25 - 125*

Lab Sample ID: 117951-BS2
Matrix: BlankMatrix
Analysis Batch: O-45064

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45064_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.48		µg/L		96	31 - 128	3	30
1-Methylphenanthrene			0.5	0.556		µg/L		111	66 - 127	0	30
2,3,5-Trimethylnaphthalene			0.5	0.492		µg/L		98	55 - 122	0	30
2,6-Dimethylnaphthalene			0.5	0.485		µg/L		97	48 - 120	6	30
2-Methylnaphthalene			0.5	0.472		µg/L		94	47 - 130	0	30
Acenaphthene			0.5	0.493		µg/L		99	53 - 131	3	30
Acenaphthylene			0.5	0.49		µg/L		98	43 - 140	2	30
Anthracene			0.5	0.484		µg/L		97	58 - 135	0	30

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 117951-BS2
Matrix: BlankMatrix
Analysis Batch: O-45064

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45064_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benz[a]anthracene			0.5	0.527		µg/L		105	55 - 145	1	30
Benzo[a]pyrene			0.5	0.465		µg/L		93	51 - 143	2	30
Benzo[b]fluoranthene			0.5	0.521		µg/L		104	46 - 165	4	30
Benzo[e]pyrene			0.5	0.48		µg/L		96	42 - 152	2	30
Benzo[g,h,i]perylene			0.5	0.488		µg/L		98	63 - 133	2	30
Benzo[k]fluoranthene			0.5	0.511		µg/L		102	56 - 145	2	30
Biphenyl			0.5	0.497		µg/L		99	56 - 119	3	30
Chrysene			0.5	0.507		µg/L		101	56 - 141	1	30
Dibenz[a,h]anthracene			0.5	0.522		µg/L		104	55 - 150	1	30
Dibenzo[a,l]pyrene			0.5	0.258		µg/L		52	50 - 150	4	30
Dibenzothiophene			0.5	0.51		µg/L		102	46 - 126	0	30
Disalicylidenepropanediamine			50	48.3		µg/L		97	50 - 150	0	30
Fluoranthene			0.5	0.51		µg/L		102	60 - 146	0	30
Fluorene			0.5	0.502		µg/L		100	58 - 131	2	30
Indeno[1,2,3-cd]pyrene			0.5	0.494		µg/L		99	50 - 151	1	30
Naphthalene			0.5	0.467		µg/L		93	41 - 126	1	30
Perylene			0.5	0.476		µg/L		95	48 - 141	1	30
Phenanthrene			0.5	0.506		µg/L		101	67 - 127	1	30
Pyrene			0.5	0.492		µg/L		98	54 - 156	0	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*94*		*27 - 133*
(d10-Phenanthrene)	*97*		*43 - 129*
(d12-Chrysene)	*109*		*52 - 144*
(d12-Perylene)	*94*		*36 - 161*
(d8-Naphthalene)	*91*		*25 - 125*

QC Association Summary

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

Job ID: 380-95821-1
SDG: 625, 8015

GC VOA

Analysis Batch: 444093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95821-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	
380-95821-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B GRO LL	
380-95821-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B GRO LL	
380-95821-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	
380-95821-5	TB MOANALUA WELLS	Total/NA	Water	8015B GRO LL	
380-95821-6	TB AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015B GRO LL	
380-95821-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	8015B GRO LL	
380-95821-8	TB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	8015B GRO LL	
MB 570-444093/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-444093/4	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-444093/5	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-444093/7	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-95821-2 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B GRO LL	
380-95821-2 MSD	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B GRO LL	

Subcontract

Analysis Batch: O-45064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95821-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45064_P
380-95821-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45064_P
380-95821-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45064_P
380-95821-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45064_P
117951-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45064_P
117951-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45064_P
117951-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45064_P

Prep Batch: O-45064_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95821-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
380-95821-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
380-95821-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	EPA_625	
380-95821-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	EPA_625	
117951-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
117951-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
117951-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-95821-1
SDG: 625, 8015

Client Sample ID: MOANALUA WELLS
Date Collected: 05/13/24 09:55
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95821-1
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	444093	GC3Z	EET CAL 4	05/24/24 18:13
Total/NA	Prep	EPA_625		1	O-45064_P			05/16/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45064	YC		06/10/24 00:49

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 05/13/24 10:50
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95821-2
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	444093	GC3Z	EET CAL 4	05/24/24 16:55
Total/NA	Prep	EPA_625		1	O-45064_P			05/16/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45064	YC		06/10/24 02:37

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/13/24 11:13
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95821-3
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	444093	GC3Z	EET CAL 4	05/24/24 18:39
Total/NA	Prep	EPA_625		1	O-45064_P			05/16/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45064	YC		06/10/24 04:25

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/13/24 10:21
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95821-4
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	444093	GC3Z	EET CAL 4	05/24/24 19:05
Total/NA	Prep	EPA_625		1	O-45064_P			05/16/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45064	YC		06/10/24 06:13

Client Sample ID: TB MOANALUA WELLS
Date Collected: 05/13/24 09:55
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95821-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	444093	GC3Z	EET CAL 4	05/24/24 15:10

Lab Chronicle

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

Job ID: 380-95821-1
SDG: 625, 8015

Client Sample ID: TB AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-95821-6
Date Collected: 05/13/24 10:50
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	444093	GC3Z	EET CAL 4	05/24/24 15:36

Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-95821-7
Date Collected: 05/13/24 11:13
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	444093	GC3Z	EET CAL 4	05/24/24 16:02

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-95821-8
Date Collected: 05/13/24 10:21
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	444093	GC3Z	EET CAL 4	05/24/24 16:29

Laboratory References:

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

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 [SUBCONTRACT]

Job ID: 380-95821-1
SDG: 625, 8015

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	06-11-24
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 [SUBCONTRACT]

Job ID: 380-95821-1
SDG: 625, 8015

Method	Method Description	Protocol	Laboratory
8015B GRO LL	Gasoline Range Organics - (GC)	SW846	EET CAL 4
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
5030C	Purge and Trap	SW846	EET CAL 4

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

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 [SUBCONTRACT]

Job ID: 380-95821-1
SDG: 625, 8015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-95821-1	MOANALUA WELLS	Drinking Water	05/13/24 09:55	05/15/24 10:20	HI0000331
380-95821-2	AIEA GULCH WELLS PUMP 2	Drinking Water	05/13/24 10:50	05/15/24 10:20	HI0000331
380-95821-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	05/13/24 11:13	05/15/24 10:20	HI0000331
380-95821-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	05/13/24 10:21	05/15/24 10:20	HI0000331
380-95821-5	TB MOANALUA WELLS	Water	05/13/24 09:55	05/15/24 10:20	
380-95821-6	TB AIEA GULCH WELLS PUMP 2	Water	05/13/24 10:50	05/15/24 10:20	
380-95821-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Water	05/13/24 11:13	05/15/24 10:20	
380-95821-8	TB HALAWA WELLS UNITS 1 & 2 P1	Water	05/13/24 10:21	05/15/24 10:20	

June 18, 2024

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

Project Name: RED-HILL Project # 38001111 Job # 380-95821-1
Physis Project ID: 1407003-510

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 5/16/2024. 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
Rachel Hansen
714 602-5320
Extension 203
rachelhansen@physislabs.com

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-510

RED-HILL Project # 38001111 Job # 380-95821-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
117952	MOANALUA WELLS	380-95821-1	5/13/2024	9:55	Samplewater	Not Specified
117953	AIEA GULCH WELLS PUMP 2	380-95821-2	5/13/2024	10:50	Samplewater	Not Specified
117954	AIEA WELLS PUMPS 1&2 (260) P2	380-95821-3	5/13/2024	11:13	Samplewater	Not Specified
117955	HALAWA WELLS UNITS 1 & 2 P1	380-95821-4	5/13/2024	10:21	Samplewater	Not Specified

1904 E. Wright Circle Anaheim, CA 92806 (714) 602-5320 fax (714) 602-5321 www.physislabs.com CA ELAP #2769

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

1904 E. Wright Circle Anaheim, CA 92806 (714) 602-5320 fax (714) 602-5321 www.physislabs.com CA ELAP #2769

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 MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) 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.

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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.

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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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ANALYTICAL REPORT

PHYSIS Project ID: 1407003-510
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-95821-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117952-R1	**MOANALUA WELLS 380-95821-1**	**Matrix: Samplewater**					**Sampled: 13-May-24 9:55**			**Received: 16-May-24**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45064	16-May-24	10-Jun-24
Sample ID: 117953-R1	**AIEA GULCH WELLS PUMP 2 380-9**	**Matrix: Samplewater**					**Sampled: 13-May-24 10:50**			**Received: 16-May-24**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45064	16-May-24	10-Jun-24
Sample ID: 117954-R1	**AIEA WELLS PUMPS 1&2 (260) P2 3**	**Matrix: Samplewater**					**Sampled: 13-May-24 11:13**			**Received: 16-May-24**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45064	16-May-24	10-Jun-24
Sample ID: 117955-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**	**Matrix: Samplewater**					**Sampled: 13-May-24 10:21**			**Received: 16-May-24**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45064	16-May-24	10-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117952-R1	**MOANALUA WELLS 380-95821-1**	**Matrix: Samplewater**					**Sampled: 13-May-24 9:55**			**Received: 16-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	86	1			Total		O-45064	16-May-24	10-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	89	1			Total		O-45064	16-May-24	10-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	103	1			Total		O-45064	16-May-24	10-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	93	1			Total		O-45064	16-May-24	10-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	79	1			Total		O-45064	16-May-24	10-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24

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-45064	16-May-24	10-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117953-R1	**AIEA GULCH WELLS PUMP 2 380-9**	**Matrix: Samplewater**					**Sampled: 13-May-24 10:50**			**Received: 16-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	84	1			Total		O-45064	16-May-24	10-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	91	1			Total		O-45064	16-May-24	10-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	106	1			Total		O-45064	16-May-24	10-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	91	1			Total		O-45064	16-May-24	10-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	76	1			Total		O-45064	16-May-24	10-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24

PHYSIS Project ID: 1407003-510
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-95821-1

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-45064	16-May-24	10-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117954-R1	**AIEA WELLS PUMPS 1&2 (260) P2 3 Matrix: Samplewater**						**Sampled: 13-May-24 11:13**			**Received: 16-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	91	1			Total		O-45064	16-May-24	10-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	95	1			Total		O-45064	16-May-24	10-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	111	1			Total		O-45064	16-May-24	10-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	93	1			Total		O-45064	16-May-24	10-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	84	1			Total		O-45064	16-May-24	10-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	0.0077	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	0.0104	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	0.00546	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Chrysene	EPA 625.1	µg/L	0.00677	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24

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	0.00841	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Pyrene	EPA 625.1	µg/L	0.00978	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24

PHYSIS Project ID: 1407003-510
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-95821-1

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117955-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**	**Matrix: Samplewater**					**Sampled: 13-May-24 10:21**			**Received: 16-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	89	1			Total		O-45064	16-May-24	10-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	92	1			Total		O-45064	16-May-24	10-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	112	1			Total		O-45064	16-May-24	10-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	92	1			Total		O-45064	16-May-24	10-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	79	1			Total		O-45064	16-May-24	10-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24

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-45064	16-May-24	10-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45064	16-May-24	10-Jun-24

QUALITY CONTROL REPORT

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 117951-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**						**Received:**	
		Method: EPA 625.1				Batch ID: O-45064			Prepared: 16-May-24				Analyzed: 09-Jun-24	
Disalicylidenepropanediamine	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 117951-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**						**Received:**	
		Method: EPA 625.1				Batch ID: O-45064			Prepared: 16-May-24				Analyzed: 09-Jun-24	
Disalicylidenepropanediamine	Total	48.6	1	0.05	0.1	µg/L	50	0	97	50 - 150%	PASS			
Sample ID: 117951-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**						**Received:**	
		Method: EPA 625.1				Batch ID: O-45064			Prepared: 16-May-24				Analyzed: 09-Jun-24	
Disalicylidenepropanediamine	Total	48.3	1	0.05	0.1	µg/L	50	0	97	50 - 150%	PASS	0	30 PASS	

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 117951-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**					**Received:**	
	Method: EPA 625.1					Batch ID: O-45064		Prepared: 16-May-24				Analyzed: 09-Jun-24	
(d10-Acenaphthene)	Total	91	1			% Recovery	100	91	27 - 133%	PASS			
(d10-Phenanthrene)	Total	94	1			% Recovery	100	94	43 - 129%	PASS			
(d12-Chrysene)	Total	118	1			% Recovery	100	118	52 - 144%	PASS			
(d12-Perylene)	Total	99	1			% Recovery	100	99	36 - 161%	PASS			
(d8-Naphthalene)	Total	84	1			% Recovery	100	84	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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 117951-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
	Method: EPA 625.1					Batch ID: O-45064		Prepared: 16-May-24				Analyzed: 09-Jun-24	
(d10-Acenaphthene)	Total	92	1			% Recovery	100	0	92	27 - 133%	PASS		
(d10-Phenanthrene)	Total	97	1			% Recovery	100	0	97	43 - 129%	PASS		
(d12-Chrysene)	Total	115	1			% Recovery	100	0	115	52 - 144%	PASS		
(d12-Perylene)	Total	93	1			% Recovery	100	0	93	36 - 161%	PASS		
(d8-Naphthalene)	Total	88	1			% Recovery	100	0	88	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.553	1	0.001	0.005	µg/L	0.5	0	111	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.489	1	0.001	0.005	µg/L	0.5	0	98	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.456	1	0.001	0.005	µg/L	0.5	0	91	48 - 120%	PASS		
2-Methylnaphthalene	Total	0.468	1	0.001	0.005	µg/L	0.5	0	94	47 - 130%	PASS		
Acenaphthene	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	53 - 131%	PASS		
Acenaphthylene	Total	0.479	1	0.001	0.005	µg/L	0.5	0	96	43 - 140%	PASS		
Anthracene	Total	0.484	1	0.001	0.005	µg/L	0.5	0	97	58 - 135%	PASS		
Benz[a]anthracene	Total	0.52	1	0.001	0.005	µg/L	0.5	0	104	55 - 145%	PASS		
Benzo[a]pyrene	Total	0.473	1	0.001	0.005	µg/L	0.5	0	95	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.489	1	0.001	0.005	µg/L	0.5	0	98	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	0.482	1	0.001	0.005	µg/L	0.5	0	96	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	0.499	1	0.001	0.005	µg/L	0.5	0	100	56 - 145%	PASS		
Biphenyl	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	56 - 119%	PASS		
Chrysene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	0.523	1	0.001	0.005	µg/L	0.5	0	105	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.252	1	0.001	0.005	µg/L	0.5	0	50	50 - 150%	PASS		

PHYSIS Project ID: 1407003-510
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-95821-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Dibenzothiophene	Total	0.511	1	0.001	0.005	µg/L	0.5	0	102	46 - 126%	PASS			
Fluoranthene	Total	0.511	1	0.001	0.005	µg/L	0.5	0	102	60 - 146%	PASS			
Fluorene	Total	0.491	1	0.001	0.005	µg/L	0.5	0	98	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.491	1	0.001	0.005	µg/L	0.5	0	98	50 - 151%	PASS			
Naphthalene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	41 - 126%	PASS			
Perylene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	48 - 141%	PASS			
Phenanthrene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	67 - 127%	PASS			
Pyrene	Total	0.492	1	0.001	0.005	µg/L	0.5	0	98	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 117951-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**		
	Method: EPA 625.1					Batch ID: O-45064		Prepared: 16-May-24				Analyzed: 09-Jun-24		
(d10-Acenaphthene)	Total	94	1			% Recovery	100	0	94	27 - 133%	PASS	2	30 PASS	
(d10-Phenanthrene)	Total	97	1			% Recovery	100	0	97	43 - 129%	PASS	0	30 PASS	
(d12-Chrysene)	Total	109	1			% Recovery	100	0	109	52 - 144%	PASS	5	30 PASS	
(d12-Perylene)	Total	94	1			% Recovery	100	0	94	36 - 161%	PASS	1	30 PASS	
(d8-Naphthalene)	Total	91	1			% Recovery	100	0	91	25 - 125%	PASS	3	30 PASS	
1-Methylnaphthalene	Total	0.48	1	0.001	0.005	µg/L	0.5	0	96	31 - 128%	PASS	3	30 PASS	
1-Methylphenanthrene	Total	0.556	1	0.001	0.005	µg/L	0.5	0	111	66 - 127%	PASS	0	30 PASS	
2,3,5-Trimethylnaphthalene	Total	0.492	1	0.001	0.005	µg/L	0.5	0	98	55 - 122%	PASS	0	30 PASS	
2,6-Dimethylnaphthalene	Total	0.485	1	0.001	0.005	µg/L	0.5	0	97	48 - 120%	PASS	6	30 PASS	
2-Methylnaphthalene	Total	0.472	1	0.001	0.005	µg/L	0.5	0	94	47 - 130%	PASS	0	30 PASS	
Acenaphthene	Total	0.493	1	0.001	0.005	µg/L	0.5	0	99	53 - 131%	PASS	3	30 PASS	
Acenaphthylene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	43 - 140%	PASS	2	30 PASS	
Anthracene	Total	0.484	1	0.001	0.005	µg/L	0.5	0	97	58 - 135%	PASS	0	30 PASS	
Benz[a]anthracene	Total	0.527	1	0.001	0.005	µg/L	0.5	0	105	55 - 145%	PASS	1	30 PASS	
Benzo[a]pyrene	Total	0.465	1	0.001	0.005	µg/L	0.5	0	93	51 - 143%	PASS	2	30 PASS	
Benzo[b]fluoranthene	Total	0.521	1	0.001	0.005	µg/L	0.5	0	104	46 - 165%	PASS	4	30 PASS	
Benzo[e]pyrene	Total	0.48	1	0.001	0.005	µg/L	0.5	0	96	42 - 152%	PASS	2	30 PASS	
Benzo[g,h,i]perylene	Total	0.488	1	0.001	0.005	µg/L	0.5	0	98	63 - 133%	PASS	2	30 PASS	
Benzo[k]fluoranthene	Total	0.511	1	0.001	0.005	µg/L	0.5	0	102	56 - 145%	PASS	2	30 PASS	
Biphenyl	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	56 - 119%	PASS	3	30 PASS	
Chrysene	Total	0.507	1	0.001	0.005	µg/L	0.5	0	101	56 - 141%	PASS	1	30 PASS	
Dibenz[a,h]anthracene	Total	0.522	1	0.001	0.005	µg/L	0.5	0	104	55 - 150%	PASS	1	30 PASS	
Dibenzo[a,l]pyrene	Total	0.258	1	0.001	0.005	µg/L	0.5	0	52	50 - 150%	PASS	4	30 PASS	

PHYSIS Project ID: 1407003-510
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-95821-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Dibenzothiophene	Total	0.51	1	0.001	0.005	µg/L	0.5	0	102	46 - 126%	PASS	0	30	PASS	
Fluoranthene	Total	0.51	1	0.001	0.005	µg/L	0.5	0	102	60 - 146%	PASS	0	30	PASS	
Fluorene	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	58 - 131%	PASS	2	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.494	1	0.001	0.005	µg/L	0.5	0	99	50 - 151%	PASS	1	30	PASS	
Naphthalene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	41 - 126%	PASS	1	30	PASS	
Perylene	Total	0.476	1	0.001	0.005	µg/L	0.5	0	95	48 - 141%	PASS	1	30	PASS	
Phenanthrene	Total	0.506	1	0.001	0.005	µg/L	0.5	0	101	67 - 127%	PASS	1	30	PASS	
Pyrene	Total	0.492	1	0.001	0.005	µg/L	0.5	0	98	54 - 156%	PASS	0	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 117952

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.8965	3.1034	1111	Anthracene-D10-	1719-06-8	97
10.2611	0.7969	285	Hydroperoxide, 1-ethylbutyl	24254-56-6	83
10.6166	0.7627	273	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	89
55.2717	0.4303	154	Benzyl butyl phthalate	85-68-7	95
32.0460	0.4120	147	Benzoic acid, 2-ethylhexyl ester	5444-75-7	97
10.3842	0.3583	128	2-Methylbutanoic anhydride	1468-39-9	85

Concentration estimated using the response for Anthracene-d10

Sample ID: 117953

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3256	3.5912	1111	Anthracene-D10-	1517-22-2	95
62.9103	0.7743	240	Heneicosane	629-94-7	95
10.2617	0.7070	219	Hydroperoxide, 1-ethylbutyl	24254-56-6	84
65.8056	0.7047	218	Heptacosane	593-49-7	93
68.6013	0.5824	180	Octacosane	630-02-4	92
10.6183	0.4543	141	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	86
27.4187	0.4184	129	Diethyl Phthalate	84-66-2	99
32.0429	0.3464	107	Benzoic acid, 2-ethylhexyl ester	5444-75-7	96

Concentration estimated using the response for Anthracene-d10

Sample ID: 117954

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.8985	3.5549	1111	Anthracene-D10	1517-22-2	97
9.5401	1.2257	383	Methane, tribromo-	75-25-2	100
8.4959	1.0029	313	2-Hexene, 4-methyl-, (E)-	3683-22-5	88
10.2615	0.9452	295	Hydroperoxide, 1-ethylbutyl	24254-56-6	83
8.9306	0.7449	233	7-Oxabicyclo[2.2.1]heptane	279-49-2	86
8.6170	0.6301	197	Butane, 2,3-dichloro-2-methyl-	507-45-9	97
10.6177	0.6276	196	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	90
8.2218	0.6181	193	Cyclopentane, 1,1-dimethyl-	1638-26-2	82
8.3648	0.4761	149	3-Chlorohexane	2346-81-8	90
32.0465	0.4605	144	Benzoic acid, 2-ethylhexyl ester	5444-75-7	97
10.3847	0.4542	142	Hydroperoxide, 1-methylpentyl	24254-55-5	86
10.9574	0.4281	134	Oxalic acid, cyclohexyl ethyl ester	1000309-30-2	86
27.4186	0.4073	127	Diethyl Phthalate	84-66-2	98
8.1585	0.3624	113	3-Hexanol	623-37-0	90
11.0005	0.3609	113	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	85

Concentration estimated using the response for Anthracene-d10

Sample ID: 117955

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.8987	3.0228	1111	Anthracene-D10-	1517-22-2	96
8.4836	0.8037	295	2-Hexene, 4-methyl-, (E)-	3683-22-5	87
10.2611	0.7283	268	Hydroperoxide, 1-ethylbutyl	24254-56-6	84
8.6049	0.5393	198	Butane, 2,3-dichloro-2-methyl-	507-45-9	98
8.3520	0.5369	197	3-Chlorohexane	2346-81-8	84
8.9216	0.5192	191	7-Oxabicyclo[2.2.1]heptane	279-49-2	86
10.6170	0.4304	158	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	89
8.2087	0.4175	153	1-Butene, 2-ethyl-3-methyl-	7357-93-9	82
59.9020	0.3922	144	Heptadecane	629-78-7	93
32.0441	0.3550	130	Benzoic acid, 2-ethylhexyl ester	5444-75-7	97
62.9145	0.3375	124	Heneicosane	629-94-7	93
65.8057	0.3265	120	Pentadecane, 2,6,10-trimethyl-	3892-00-0	89
8.1422	0.3203	118	Amylene hydrate	75-85-4	92
65.0445	0.3112	114	9-Octadecen-1-ol, (Z)-	143-28-2	87

Concentration estimated using the response for Anthracene-d10

Sample ID: B1_45064

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.9058	2.9161	1111	Anthracene-D10-	1719-06-8	97
10.6178	0.5261	200	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	88
10.2621	0.5031	192	Hydroperoxide, 1-ethylbutyl	24254-56-6	86

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

eurofins | Environment Testing

6/18/2024

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-125661.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-95821-1
Address: 1904 Wright Circle, ,	Due Date Requested: 6/4/2024			Preservation Codes: -
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			Other:
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MOANALUA WELLS (380-95821-1)	5/13/24	09:55 Hawaiian		Water			X	2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (380-95821-2)	5/13/24	10:50 Hawaiian		Water			X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) P2 (380-95821-3)	5/13/24	11:13 Hawaiian		Water			X	2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 P1 (380-95821-4)	5/13/24	10:21 Hawaiian		Water			X	2	See Attached Instructions

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.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 5/16/24 1131	Company: GEA	Received by: Mitch Wagner	Date/Time: 05/16/24 1131	Company: Physis
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:

Ver: 06/08/2021

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Project Iteration ID: 1407003-510
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111 Job # 380-95821-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: MW
2. Date Received: 5/16/24
3. Time Received: 11:31
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): 4.1 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: [illegible]

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

eurofins

Client Information	Sampler: bailey	Lab PM: Arada Rachelle	Carrier Tracking No(s):	COC No: 380-27984-2757 2
Client Contact: Dr Ron Fenstermacher	Phone: 808-748-5840	E Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: City & County of Honolulu	PWSID:	Analysis Requested		Job #:
Address: 630 South Beretania Street, Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Preservation Codes: A HCL; B NaOH; C Zn Acetate; D Nitric Acid; E NaHSO4; F MeOH; G Amchlor; H Ascorbic Acid; I Ice; J DI Water; K EDTA; L EDA; M Hexane; N None; O AsNaO2; P Na2O4S; Q Na2SO3; R Na2S2O3; S H2SO4; T TSP Dodecahydrate; U Acetone; V MCAA; W pH 4-5; Y Trizma; Z other (specify); Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS HNL Ranges C10-C24/C24 C36/CB-C18	525.2_PREC (MOD) 525plus PLUS TICs	537.1_DW_PREC 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note
			Preservation Code				R	A	Q		Y	N		
MOANALUA WELLS	13-May-2024	0955	G	Water			2	4	2	2				chlorinated
AIEA GULCH WELLS PUMP2	13-May-2024	1050	G	Water			2	4	2	2				chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	13-May-2024	1113	G	Water			2	4	2	2				
HALAWA WELLS UNITS 1&2 P1	13-May-2024	1021	G	Water			2	4	2	2				
TB MOANALUA WELLS	13-May-2024	0955		Water				2						
TB AIEA GULCH WELLS PUMP2	13-May-2024	1050		Water				2						
TB AIEA WELLS PUMPS 1&2 (260)	13-May-2024	1113		Water				2						
TB HALAWA WELLS UNITS 1&2	13-May-2024	1021		Water				2						

380-95821 COC

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I II III IV, Other (specify)

Special Instructions/QC Requirements: ① 7763 8143 1894 ② 7763 8143 1885

Empty Kit Relinquished by	Date	Time	Method of Shipment: FEDEX ③ 7763 8143 1896

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
bailey	14May2024 1400	HBWS	B.PETTNER	05/15/2024 10:20	EEAP
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
		(75IR) ① 5.4°-0.1°=5.3° / ② 3.4°-0.1°=3.3° / ③ 0.9°-0.1°=0.8° GEL FROZEN

Ver. 01.16.2019

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

Chain of Custody Record

eurofins | E

Loc: 380
95821

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-125648.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.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 #: 380-95821-1
Address: 2841 Dow Avenue, Suite 100, ,	Due Date Requested: 6/5/2024			
City: Tustin	TAT Requested (days):			
State, Zip: CA, 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

Preservation Codes:

Other:

380-95821 Chain of Custody

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO_LL_CS/3510C_LL HNL Ranges: C10-C24/C24-C36/C8-C18	8015B_GRO_LL/5030C (MOD) GRO	8015B_GRO_LL/5030C GRO	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MOANALUA WELLS (380-95821-1)	5/13/24	09:55 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA GULCH WELLS PUMP 2 (380-95821-2)	5/13/24	10:50 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA WELLS PUMPS 1&2 (260) P2 (380-95821-3)	5/13/24	11:13 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
HALAWA WELLS UNITS 1 & 2 P1 (380-95821-4)	5/13/24	10:21 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
TB MOANALUA WELLS (380-95821-5)	5/13/24	09:55 Hawaiian		Water					X	2	MRLs are needed.
TB AIEA GULCH WELLS PUMP 2 (380-95821-6)	5/13/24	10:50 Hawaiian		Water					X	2	MRLs are needed.
TB AIEA WELLS PUMPS 1&2 (260) P2 (380-95821-7)	5/13/24	11:13 Hawaiian		Water					X	2	MRLs are needed.
TB HALAWA WELLS UNITS 1 & 2 P1 (380-95821-8)	5/13/24	10:21 Hawaiian		Water					X	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.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *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:	Date/Time:	Company	Received by:	Date/Time:	Company
	5/16/24 1200	BCA		5/16/24 12:00	BC
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: 1.6/1.7 SC14

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-95821-1
SDG Number: 625, 8015

Login Number: 95821
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: 380-95821-1
SDG Number: 625, 8015

Login Number: 95821
List Number: 2
Creator: Khana, Piyush

List Source: Eurofins Calscience
List Creation: 05/16/24 02:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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	1.7
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/22/2024 10:01:18 AM

JOB DESCRIPTION

RED-HILL
525.2, 533, 537.1

JOB NUMBER

380-95827-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

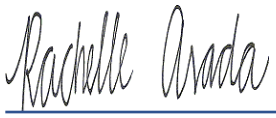
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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5/22/2024 10:01:18 AM

Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
F1	MS and/or MSD recovery exceeds control limits.
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.

LCMS

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

Glossary

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

Job Narrative
380-95827-1

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 5/15/2024 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.8°C, 3.3°C and 5.3°C.

GC/MS Semi VOA
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 (380-95827-4).

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

Detection Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-95827-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP2 — Lab Sample ID: 380-95827-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95827-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95827-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0		ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0		ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0		ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.2		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: FB MOANALUA WELLS — Lab Sample ID: 380-95827-5

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP2 — Lab Sample ID: 380-95827-6

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95827-7

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95827-8

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 05/13/24 09:55
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-1
Matrix: Water

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		05/18/24 12:45	05/20/24 16:53	1
2,4'-DDD	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
2,4'-DDE	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
2,4'-DDT	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
2-Methylnaphthalene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
4,4'-DDD	<0.098	^3+	0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
4,4'-DDE	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
4,4'-DDT	<0.098	^3+	0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Acenaphthene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Acenaphthylene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Acetochlor	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Alachlor	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
alpha-BHC	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
alpha-Chlordane	<0.049	^+	0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Anthracene	<0.020		0.020		ug/L		05/18/24 12:45	05/20/24 16:53	1
Atrazine	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Benz(a)anthracene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Benzo[a]pyrene	<0.020	^3+	0.020		ug/L		05/18/24 12:45	05/20/24 16:53	1
Benzo[b]fluoranthene	<0.020	^3+	0.020		ug/L		05/18/24 12:45	05/20/24 16:53	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Benzo[k]fluoranthene	<0.020	^3+	0.020		ug/L		05/18/24 12:45	05/20/24 16:53	1
beta-BHC	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		05/18/24 12:45	05/20/24 16:53	1
Bromacil	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Butachlor	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Butylbenzylphthalate	<0.49		0.49		ug/L		05/18/24 12:45	05/20/24 16:53	1
Chlorobenzilate	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Chloroneb	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Chlorpyrifos	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Chrysene	<0.020	^3+	0.020		ug/L		05/18/24 12:45	05/20/24 16:53	1
delta-BHC	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		05/18/24 12:45	05/20/24 16:53	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Dieldrin	<0.20		0.20		ug/L		05/18/24 12:45	05/20/24 16:53	1
Diethylphthalate	<0.49		0.49		ug/L		05/18/24 12:45	05/20/24 16:53	1
Dimethylphthalate	<0.49		0.49		ug/L		05/18/24 12:45	05/20/24 16:53	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		05/18/24 12:45	05/20/24 16:53	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Endosulfan sulfate	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Endrin	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Endrin aldehyde	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
EPTC	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Fluoranthene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 05/13/24 09:55
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
gamma-Chlordane	<0.049	^+	0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Heptachlor	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 16:53	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Hexachlorobenzene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Hexachlorocyclopentadiene	<0.049	^3+	0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Isophorone	<0.49		0.49		ug/L		05/18/24 12:45	05/20/24 16:53	1
Lindane	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 16:53	1
Malathion	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Methoxychlor	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Metolachlor	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Molinate	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Naphthalene	<0.29		0.29		ug/L		05/18/24 12:45	05/20/24 16:53	1
Parathion	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Phenanthrene	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 16:53	1
Propachlor	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Pyrene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Simazine	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Terbacil	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Terbuthylazine	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1
Thiobencarb	<0.20		0.20		ug/L		05/18/24 12:45	05/20/24 16:53	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		05/18/24 12:45	05/20/24 16:53	1
trans-Nonachlor	<0.049	^+	0.049		ug/L		05/18/24 12:45	05/20/24 16:53	1
Trifluralin	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/18/24 12:45*	*05/20/24 16:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*92*		*70 - 130*	*05/18/24 12:45*	*05/20/24 16:53*	*1*
Perylene-d12	*96*		*70 - 130*	*05/18/24 12:45*	*05/20/24 16:53*	*1*
Triphenylphosphate	*98*		*70 - 130*	*05/18/24 12:45*	*05/20/24 16:53*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 05/13/24 09:55
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*66*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C6 PFDA	*62*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C5 PFHxA	*70*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C4 PFHpA	*63*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C8 PFOA	*69*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C9 PFNA	*61*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C7 PFUnA	*63*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C2 PFDoA	*62*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C4 PFBA	*81*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C5 PFPeA	*77*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C3 PFBS	*94*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C3 PFHxS	*91*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C8 PFOS	*88*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C2-4:2-FTS	*87*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C2-6:2-FTS	*80*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*1*
13C2-8:2-FTS	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:10*	*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		05/16/24 07:57	05/16/24 20:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1

Client Sample ID: MOANALUA WELLS

Date Collected: 05/13/24 09:55
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-1

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*110*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:02*	*1*
13C2 PFHxA	*104*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:02*	*1*
13C2 PFDA	*98*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:02*	*1*
13C3-GenX	*100*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:02*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP2

Date Collected: 05/13/24 10:50
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-2

Matrix: Water

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		05/18/24 12:45	05/20/24 16:33	1
2,4'-DDD	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
2,4'-DDE	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
2,4'-DDT	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
2-Methylnaphthalene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
4,4'-DDD	<0.098	^3+	0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
4,4'-DDE	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
4,4'-DDT	<0.098	^3+	0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Acenaphthene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Acenaphthylene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Acetochlor	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Alachlor	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
alpha-BHC	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
alpha-Chlordane	<0.049	F1 ^+	0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Anthracene	<0.020		0.020		ug/L		05/18/24 12:45	05/20/24 16:33	1
Atrazine	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Benz(a)anthracene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Benzo[a]pyrene	<0.020	^3+	0.020		ug/L		05/18/24 12:45	05/20/24 16:33	1
Benzo[b]fluoranthene	<0.020	^3+	0.020		ug/L		05/18/24 12:45	05/20/24 16:33	1
Benzo[g,h,i]perylene	<0.049	F1	0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP2
Date Collected: 05/13/24 10:50
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.020	^3+	0.020		ug/L		05/18/24 12:45	05/20/24 16:33	1
beta-BHC	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		05/18/24 12:45	05/20/24 16:33	1
Bromacil	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Butachlor	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Butylbenzylphthalate	<0.49		0.49		ug/L		05/18/24 12:45	05/20/24 16:33	1
Chlorobenzilate	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Chloroneb	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Chlorpyrifos	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Chrysene	<0.020	^3+	0.020		ug/L		05/18/24 12:45	05/20/24 16:33	1
delta-BHC	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		05/18/24 12:45	05/20/24 16:33	1
Dibenz(a,h)anthracene	<0.049	F1	0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Dieldrin	<0.20		0.20		ug/L		05/18/24 12:45	05/20/24 16:33	1
Diethylphthalate	<0.49		0.49		ug/L		05/18/24 12:45	05/20/24 16:33	1
Dimethylphthalate	<0.49		0.49		ug/L		05/18/24 12:45	05/20/24 16:33	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		05/18/24 12:45	05/20/24 16:33	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Endosulfan sulfate	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Endrin	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Endrin aldehyde	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
EPTC	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Fluoranthene	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Fluorene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
gamma-Chlordane	<0.049	F1 ^+	0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Heptachlor	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 16:33	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Hexachlorobenzene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Hexachlorocyclopentadiene	<0.049	^3+	0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Indeno[1,2,3-cd]pyrene	<0.049	F1	0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Isophorone	<0.49		0.49		ug/L		05/18/24 12:45	05/20/24 16:33	1
Lindane	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 16:33	1
Malathion	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Methoxychlor	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Metolachlor	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Molinate	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Naphthalene	<0.29		0.29		ug/L		05/18/24 12:45	05/20/24 16:33	1
Parathion	<0.098	F1	0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Phenanthrene	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 16:33	1
Propachlor	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Pyrene	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Simazine	<0.049		0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Terbacil	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1
Terbuthylazine	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP2
Date Collected: 05/13/24 10:50
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.20		0.20		ug/L		05/18/24 12:45	05/20/24 16:33	1
Total Permethrin (mixed isomers)	<0.20	F1	0.20		ug/L		05/18/24 12:45	05/20/24 16:33	1
trans-Nonachlor	<0.049	F1 ^+	0.049		ug/L		05/18/24 12:45	05/20/24 16:33	1
Trifluralin	<0.098		0.098		ug/L		05/18/24 12:45	05/20/24 16:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/18/24 12:45*	*05/20/24 16:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*95*		*70 - 130*	*05/18/24 12:45*	*05/20/24 16:33*	*1*
Perylene-d12	*95*		*70 - 130*	*05/18/24 12:45*	*05/20/24 16:33*	*1*
Triphenylphosphate	*93*		*70 - 130*	*05/18/24 12:45*	*05/20/24 16:33*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:20	1

Client Sample ID: AIEA GULCH WELLS PUMP2
Date Collected: 05/13/24 10:50
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-2
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*70*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C6 PFDA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C5 PFHxA	*71*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C4 PFHpA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C8 PFOA	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C9 PFNA	*70*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C7 PFUnA	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C2 PFDoA	*67*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C4 PFBA	*79*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C5 PFPeA	*78*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C3 PFBS	*94*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C3 PFHxS	*97*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C8 PFOS	*91*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C2-4:2-FTS	*91*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C2-6:2-FTS	*86*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*1*
13C2-8:2-FTS	*78*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:20*	*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		05/16/24 07:57	05/16/24 20:13	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*106*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:13*	*1*
13C2 PFHxA	*100*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:13*	*1*
13C2 PFDA	*97*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:13*	*1*
13C3-GenX	*101*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:13*	*1*

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

Date Collected: 05/13/24 11:13
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
2,4'-DDD	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
2,4'-DDE	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
2,4'-DDT	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
2-Methylnaphthalene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
4,4'-DDD	<0.097	^3+	0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
4,4'-DDE	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
4,4'-DDT	<0.097	^3+	0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Acenaphthene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Acenaphthylene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Acetochlor	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Alachlor	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
alpha-BHC	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
alpha-Chlordane	<0.048	^+	0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Anthracene	<0.019		0.019		ug/L		05/18/24 12:45	05/20/24 17:13	1
Atrazine	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Benz(a)anthracene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Benzo[a]pyrene	<0.019	^3+	0.019		ug/L		05/18/24 12:45	05/20/24 17:13	1
Benzo[b]fluoranthene	<0.019	^3+	0.019		ug/L		05/18/24 12:45	05/20/24 17:13	1
Benzo[g,h,i]perylene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Benzo[k]fluoranthene	<0.019	^3+	0.019		ug/L		05/18/24 12:45	05/20/24 17:13	1
beta-BHC	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		05/18/24 12:45	05/20/24 17:13	1
Bromacil	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Butachlor	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Butylbenzylphthalate	<0.48		0.48		ug/L		05/18/24 12:45	05/20/24 17:13	1
Chlorobenzilate	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Chloroneb	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Chlorpyrifos	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Chrysene	<0.019	^3+	0.019		ug/L		05/18/24 12:45	05/20/24 17:13	1
delta-BHC	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		05/18/24 12:45	05/20/24 17:13	1
Dibenz(a,h)anthracene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Diclorvos (DDVP)	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Dieldrin	<0.19		0.19		ug/L		05/18/24 12:45	05/20/24 17:13	1
Diethylphthalate	<0.48		0.48		ug/L		05/18/24 12:45	05/20/24 17:13	1
Dimethylphthalate	<0.48		0.48		ug/L		05/18/24 12:45	05/20/24 17:13	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		05/18/24 12:45	05/20/24 17:13	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Endosulfan sulfate	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Endrin	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Endrin aldehyde	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
EPTC	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Fluoranthene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/13/24 11:13
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
gamma-Chlordane	<0.048	^+	0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Heptachlor	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 17:13	1
Heptachlor epoxide (isomer B)	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Hexachlorobenzene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Hexachlorocyclopentadiene	<0.048	^3+	0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Isophorone	<0.48		0.48		ug/L		05/18/24 12:45	05/20/24 17:13	1
Lindane	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 17:13	1
Malathion	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Methoxychlor	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Metolachlor	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Molinate	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Naphthalene	<0.29		0.29		ug/L		05/18/24 12:45	05/20/24 17:13	1
Parathion	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Phenanthrene	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 17:13	1
Propachlor	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Pyrene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Simazine	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Terbacil	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Terbuthylazine	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1
Thiobencarb	<0.19		0.19		ug/L		05/18/24 12:45	05/20/24 17:13	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		05/18/24 12:45	05/20/24 17:13	1
trans-Nonachlor	<0.048	^+	0.048		ug/L		05/18/24 12:45	05/20/24 17:13	1
Trifluralin	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:13	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/18/24 12:45*	*05/20/24 17:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*96*		*70 - 130*	*05/18/24 12:45*	*05/20/24 17:13*	*1*
Perylene-d12	*88*		*70 - 130*	*05/18/24 12:45*	*05/20/24 17:13*	*1*
Triphenylphosphate	*86*		*70 - 130*	*05/18/24 12:45*	*05/20/24 17:13*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/13/24 11:13
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C6 PFDA	*68*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C5 PFHxA	*75*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C4 PFHpA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C8 PFOA	*76*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C9 PFNA	*70*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C7 PFUnA	*67*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C2 PFDoA	*66*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C4 PFBA	*82*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C5 PFPeA	*78*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C3 PFBS	*94*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C3 PFHxS	*94*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C8 PFOS	*94*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C2-4:2-FTS	*87*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C2-6:2-FTS	*86*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*1*
13C2-8:2-FTS	*75*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:30*	*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		05/16/24 07:57	05/16/24 20:24	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1

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

Lab Sample ID: 380-95827-3

Date Collected: 05/13/24 11:13
Matrix: Water
Date Received: 05/15/24 10:20

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*107*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:24*	*1*
13C2 PFHxA	*99*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:24*	*1*
13C2 PFDA	*94*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:24*	*1*
13C3-GenX	*95*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:24*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-95827-4

Date Collected: 05/13/24 10:21
Matrix: Water
Date Received: 05/15/24 10:20

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
2,4'-DDD	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
2,4'-DDE	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
2,4'-DDT	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
2-Methylnaphthalene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
4,4'-DDD	<0.097	^3+	0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
4,4'-DDE	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
4,4'-DDT	<0.097	^3+	0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Acenaphthene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Acenaphthylene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Acetochlor	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Alachlor	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
alpha-BHC	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
alpha-Chlordane	<0.048	^+	0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Anthracene	<0.019		0.019		ug/L		05/18/24 12:45	05/20/24 17:33	1
Atrazine	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Benz(a)anthracene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Benzo[a]pyrene	<0.019	^3+	0.019		ug/L		05/18/24 12:45	05/20/24 17:33	1
Benzo[b]fluoranthene	<0.019	^3+	0.019		ug/L		05/18/24 12:45	05/20/24 17:33	1
Benzo[g,h,i]perylene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/13/24 10:21
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-4
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.019	^3+	0.019		ug/L		05/18/24 12:45	05/20/24 17:33	1
beta-BHC	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		05/18/24 12:45	05/20/24 17:33	1
Bromacil	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Butachlor	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Butylbenzylphthalate	<0.48		0.48		ug/L		05/18/24 12:45	05/20/24 17:33	1
Chlorobenzilate	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Chloroneb	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Chlorpyrifos	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Chrysene	<0.019	^3+	0.019		ug/L		05/18/24 12:45	05/20/24 17:33	1
delta-BHC	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		05/18/24 12:45	05/20/24 17:33	1
Dibenz(a,h)anthracene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Diclorvos (DDVP)	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Dieldrin	<0.19		0.19		ug/L		05/18/24 12:45	05/20/24 17:33	1
Diethylphthalate	<0.48		0.48		ug/L		05/18/24 12:45	05/20/24 17:33	1
Dimethylphthalate	<0.48		0.48		ug/L		05/18/24 12:45	05/20/24 17:33	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		05/18/24 12:45	05/20/24 17:33	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Endosulfan sulfate	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Endrin	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Endrin aldehyde	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
EPTC	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Fluoranthene	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Fluorene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
gamma-Chlordane	<0.048	^+	0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Heptachlor	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 17:33	1
Heptachlor epoxide (isomer B)	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Hexachlorobenzene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Hexachlorocyclopentadiene	<0.048	^3+	0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Isophorone	<0.48		0.48		ug/L		05/18/24 12:45	05/20/24 17:33	1
Lindane	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 17:33	1
Malathion	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Methoxychlor	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Metolachlor	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Molinate	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Naphthalene	<0.29		0.29		ug/L		05/18/24 12:45	05/20/24 17:33	1
Parathion	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Phenanthrene	<0.039		0.039		ug/L		05/18/24 12:45	05/20/24 17:33	1
Propachlor	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Pyrene	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Simazine	<0.048		0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Terbacil	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1
Terbuthylazine	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 05/13/24 10:21
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-4

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.19		0.19		ug/L		05/18/24 12:45	05/20/24 17:33	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		05/18/24 12:45	05/20/24 17:33	1
trans-Nonachlor	<0.048	^+	0.048		ug/L		05/18/24 12:45	05/20/24 17:33	1
Trifluralin	<0.097		0.097		ug/L		05/18/24 12:45	05/20/24 17:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/18/24 12:45*	*05/20/24 17:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*94*		*70 - 130*	*05/18/24 12:45*	*05/20/24 17:33*	*1*
Perylene-d12	*94*		*70 - 130*	*05/18/24 12:45*	*05/20/24 17:33*	*1*
Triphenylphosphate	*99*		*70 - 130*	*05/18/24 12:45*	*05/20/24 17:33*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluorohexanesulfonic acid (PFHxS)	**2.6**		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluorohexanoic acid (PFHxA)	**2.2**		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluorooctanesulfonic acid (PFOS)	**2.4**		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluorooctanoic acid (PFOA)	**2.0**		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluoropentanoic acid (PFPeA)	**2.2**		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 05/13/24 10:21
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-4

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*74*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C6 PFDA	*67*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C5 PFHxA	*74*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C4 PFHpA	*74*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C8 PFOA	*74*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C9 PFNA	*68*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C7 PFUnA	*67*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C2 PFDoA	*67*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C4 PFBA	*79*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C5 PFPeA	*78*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C3 PFBS	*90*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C3 PFHxS	*90*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C8 PFOS	*89*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C2-4:2-FTS	*85*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C2-6:2-FTS	*79*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*1*
13C2-8:2-FTS	*74*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:39*	*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		05/16/24 07:57	05/16/24 20:34	1
Perfluorooctanesulfonic acid (PFOS)	**2.1**		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluorohexanesulfonic acid (PFHxS)	**2.3**		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 20:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*105*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:34*	*1*
13C2 PFHxA	*105*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:34*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-95827-4
Matrix: Water
Date Collected: 05/13/24 10:21
Date Received: 05/15/24 10:20

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDA	*95*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:34*	*1*
13C3-GenX	*96*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:34*	*1*

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-95827-5
Matrix: Water
Date Collected: 05/13/24 09:55
Date Received: 05/15/24 10:20

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*70*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C6 PFDA	*74*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C5 PFHxA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C4 PFHpA	*71*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*

Client Sample ID: FB MOANALUA WELLS
Date Collected: 05/13/24 09:55
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-5
Matrix: Water

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 PFOA	*80*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C9 PFNA	*76*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C7 PFUnA	*74*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C2 PFDoA	*70*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C4 PFBA	*83*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C5 PFPeA	*82*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C3 PFBS	*90*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C3 PFHxS	*94*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C8 PFOS	*88*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C2-4:2-FTS	*83*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C2-6:2-FTS	*81*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*1*
13C2-8:2-FTS	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:49*	*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		05/16/24 07:57	05/16/24 20:45	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*98*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:45*	*1*
13C2 PFHxA	*100*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:45*	*1*
13C2 PFDA	*98*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:45*	*1*
13C3-GenX	*97*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:45*	*1*

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA GULCH WELLS PUMP2

Date Collected: 05/13/24 10:50
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-6

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 06:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C6 PFDA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C5 PFHxA	*74*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C4 PFHpA	*75*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C8 PFOA	*77*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C9 PFNA	*75*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C7 PFUnA	*70*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C2 PFDoA	*71*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C4 PFBA	*77*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C5 PFPeA	*77*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C3 PFBS	*91*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C3 PFHxS	*95*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C8 PFOS	*88*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*

Client Sample ID: FB AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-95827-6
Date Collected: 05/13/24 10:50
Matrix: Water
Date Received: 05/15/24 10:20

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	*86*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C2-6:2-FTS	*81*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*1*
13C2-8:2-FTS	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 06:59*	*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		05/16/24 07:57	05/16/24 20:56	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/16/24 07:57	05/16/24 20:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*104*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:56*	*1*
13C2 PFHxA	*96*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:56*	*1*
13C2 PFDA	*97*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:56*	*1*
13C3-GenX	*95*		*70 - 130*	*05/16/24 07:57*	*05/16/24 20:56*	*1*

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

Lab Sample ID: 380-95827-7
Date Collected: 05/13/24 11:13
Matrix: Water
Date Received: 05/15/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/17/24 05:06	05/18/24 07:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/17/24 05:06	05/18/24 07:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/17/24 05:06	05/18/24 07:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/17/24 05:06	05/18/24 07:08	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/13/24 11:13
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-7
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*67*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C6 PFDA	*71*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C5 PFHxA	*71*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C4 PFHpA	*69*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C8 PFOA	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C9 PFNA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C7 PFUnA	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C2 PFDoA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C4 PFBA	*79*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C5 PFPeA	*75*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C3 PFBS	*90*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C3 PFHxS	*92*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C8 PFOS	*90*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C2-4:2-FTS	*81*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C2-6:2-FTS	*79*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*1*
13C2-8:2-FTS	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:08*	*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		05/16/24 07:57	05/16/24 21:06	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1

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

Lab Sample ID: 380-95827-7

Date Collected: 05/13/24 11:13
Matrix: Water
Date Received: 05/15/24 10:20

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*112*		*70 - 130*	*05/16/24 07:57*	*05/16/24 21:06*	*1*
13C2 PFHxA	*101*		*70 - 130*	*05/16/24 07:57*	*05/16/24 21:06*	*1*
13C2 PFDA	*97*		*70 - 130*	*05/16/24 07:57*	*05/16/24 21:06*	*1*
13C3-GenX	*98*		*70 - 130*	*05/16/24 07:57*	*05/16/24 21:06*	*1*

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

Lab Sample ID: 380-95827-8

Date Collected: 05/13/24 10:21
Matrix: Water
Date Received: 05/15/24 10:20

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/13/24 10:21
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-8
Matrix: Water

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		05/17/24 05:06	05/18/24 07:18	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/17/24 05:06	05/18/24 07:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*69*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C6 PFDA	*80*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C5 PFHxA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C4 PFHpA	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C8 PFOA	*76*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C9 PFNA	*76*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C7 PFUnA	*76*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C2 PFDoA	*72*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C4 PFBA	*78*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C5 PFPeA	*73*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C3 PFBS	*89*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C3 PFHxS	*88*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C8 PFOS	*89*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C2-4:2-FTS	*81*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C2-6:2-FTS	*80*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*1*
13C2-8:2-FTS	*75*		*50 - 200*	*05/17/24 05:06*	*05/18/24 07:18*	*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		05/16/24 07:57	05/16/24 21:17	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/13/24 10:21
Date Received: 05/15/24 10:20

Lab Sample ID: 380-95827-8
Matrix: Water

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		05/16/24 07:57	05/16/24 21:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/16/24 07:57	05/16/24 21:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*116*		*70 - 130*	*05/16/24 07:57*	*05/16/24 21:17*	*1*
13C2 PFHxA	*103*		*70 - 130*	*05/16/24 07:57*	*05/16/24 21:17*	*1*
13C2 PFDA	*102*		*70 - 130*	*05/16/24 07:57*	*05/16/24 21:17*	*1*
13C3-GenX	*98*		*70 - 130*	*05/16/24 07:57*	*05/16/24 21:17*	*1*

Action Limit Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-95827-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020	^3+	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	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049	^3+	ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP2 — Lab Sample ID: 380-95827-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020	^3+	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	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049	^3+	ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP2 (Continued) — Lab Sample ID: 380-95827-2

Compliance Check

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

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

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95827-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	525.2	Total/NA
Benzo[a]pyrene	<0.019	^3+	ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.048		ug/L	0.2	0.048	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048	^3+	ug/L	50	0.048	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Action Limit Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95827-4

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	525.2	Total/NA
Benzo[a]pyrene	<0.019	^3+	ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.048		ug/L	0.2	0.048	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048	^3+	ug/L	50	0.048	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB MOANALUA WELLS — Lab Sample ID: 380-95827-5

Compliance Check

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

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

Action Limit Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA GULCH WELLS PUMP2 — Lab Sample ID: 380-95827-6

Compliance Check

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

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

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95827-7

Compliance Check

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

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

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95827-8

Compliance Check

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

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

Action Limit Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-95827-8

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Surrogate Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-95827-1	MOANALUA WELLS	92	96	98
380-95827-1 DU	MOANALUA WELLS	93	99	110
380-95827-2	AIEA GULCH WELLS PUMP2	95	95	93
380-95827-2 MS	AIEA GULCH WELLS PUMP2	98	105	118
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	96	88	86
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	94	94	99
MB 380-91165/21-A	Method Blank	99	91	112
MRL 380-91165/22-A	Lab Control Sample	101	100	110

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-95827-1	MOANALUA WELLS	110	104	98	100
380-95827-2	AIEA GULCH WELLS PUMP2	106	100	97	101
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	107	99	94	95
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	105	105	95	96
380-95827-5	FB MOANALUA WELLS	98	100	98	97
380-95827-6	FB AIEA GULCH WELLS PUMP	104	96	97	95
380-95827-7	FB AIEA WELLS PUMPS 1&2 (260) P2	112	101	97	98
380-95827-8	FB HALAWA WELLS UNITS 1 & 2 P1	116	103	102	98
380-95940-B-31-A MS	Matrix Spike	108	106	100	103
380-95940-C-31-A MSD	Matrix Spike Duplicate	102	103	98	98
LCS 380-90786/24-A	Lab Control Sample	98	96	95	95
MBL 380-90786/22-A	Method Blank	95	95	94	93
MRL 380-90786/23-A	Lab Control Sample	99	99	102	94

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: 380-95827-1
SDG: 525.2, 533, 537.1

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	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-95827-1	MOANALUA WELLS	66	62	70	63	69	61	63	62
380-95827-2	AIEA GULCH WELLS PUMP2	70	72	71	72	73	70	73	67
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	72	68	75	72	76	70	67	66
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	74	67	74	74	74	68	67	67
380-95827-5	FB MOANALUA WELLS	70	74	72	71	80	76	74	70
380-95827-6	FB AIEA GULCH WELLS PUMP	73	72	74	75	77	75	70	71
380-95827-7	FB AIEA WELLS PUMPS 1&2 (260) P2	67	71	71	69	73	72	73	72
380-95827-8	FB HALAWA WELLS UNITS 1 & 2 P1	69	80	72	73	76	76	76	72
380-95864-E-1-A MS	Matrix Spike	65	69	68	64	69	71	71	67
380-95864-F-1-A MSD	Matrix Spike Duplicate	76	75	77	78	77	72	72	71
LCS 380-90984/22-A	Lab Control Sample	86	83	86	83	87	83	82	76
MBL 380-90984/20-A	Method Blank	76	80	82	80	82	80	81	78
MRL 380-90984/21-A	Lab Control Sample	79	80	82	81	87	82	79	76

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-95827-1	MOANALUA WELLS	81	77	94	91	88	87	80	73
380-95827-2	AIEA GULCH WELLS PUMP2	79	78	94	97	91	91	86	78
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	82	78	94	94	94	87	86	75
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	79	78	90	90	89	85	79	74
380-95827-5	FB MOANALUA WELLS	83	82	90	94	88	83	81	73
380-95827-6	FB AIEA GULCH WELLS PUMP	77	77	91	95	88	86	81	73
380-95827-7	FB AIEA WELLS PUMPS 1&2 (260) P2	79	75	90	92	90	81	79	73
380-95827-8	FB HALAWA WELLS UNITS 1 & 2 P1	78	73	89	88	89	81	80	75
380-95864-E-1-A MS	Matrix Spike	75	74	90	85	90	86	82	75
380-95864-F-1-A MSD	Matrix Spike Duplicate	80	85	88	85	85	84	77	72
LCS 380-90984/22-A	Lab Control Sample	85	88	91	89	86	83	85	77
MBL 380-90984/20-A	Method Blank	80	83	90	89	89	83	83	76
MRL 380-90984/21-A	Lab Control Sample	83	83	88	91	86	78	73	71

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

Isotope Dilution Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

42FTS = 13C2-4:2-FTS
62FTS = 13C2-6:2-FTS
82FTS = 13C2-8:2-FTS

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

Lab Sample ID: MB 380-91165/21-A
Matrix: Water
Analysis Batch: 91323

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91165

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
2,4'-DDD	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
2,4'-DDE	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
2,4'-DDT	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
2-Methylnaphthalene	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
4,4'-DDD	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
4,4'-DDE	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
4,4'-DDT	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Acenaphthene	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Acenaphthylene	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Acetochlor	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Alachlor	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
alpha-BHC	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
alpha-Chlordane	<0.049	^+	0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Anthracene	<0.019		0.019		ug/L		05/18/24 10:45	05/20/24 16:13	1
Atrazine	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Benz(a)anthracene	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Benzo[a]pyrene	<0.019		0.019		ug/L		05/18/24 10:45	05/20/24 16:13	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		05/18/24 10:45	05/20/24 16:13	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		05/18/24 10:45	05/20/24 16:13	1
beta-BHC	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		05/18/24 10:45	05/20/24 16:13	1
Bromacil	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Butachlor	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Butylbenzylphthalate	<0.49		0.49		ug/L		05/18/24 10:45	05/20/24 16:13	1
Chlorobenzilate	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Chloroneb	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Chlorpyrifos	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Chrysene	<0.019		0.019		ug/L		05/18/24 10:45	05/20/24 16:13	1
delta-BHC	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		05/18/24 10:45	05/20/24 16:13	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Dieldrin	<0.19		0.19		ug/L		05/18/24 10:45	05/20/24 16:13	1
Diethylphthalate	<0.49		0.49		ug/L		05/18/24 10:45	05/20/24 16:13	1
Dimethylphthalate	<0.49		0.49		ug/L		05/18/24 10:45	05/20/24 16:13	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		05/18/24 10:45	05/20/24 16:13	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Endosulfan sulfate	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Endrin	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Endrin aldehyde	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
EPTC	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1

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

Lab Sample ID: MB 380-91165/21-A
Matrix: Water
Analysis Batch: 91323

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91165

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Fluorene	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
gamma-Chlordane	<0.049	^+	0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Heptachlor	<0.039		0.039		ug/L		05/18/24 10:45	05/20/24 16:13	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Hexachlorobenzene	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Isophorone	<0.49		0.49		ug/L		05/18/24 10:45	05/20/24 16:13	1
Lindane	<0.039		0.039		ug/L		05/18/24 10:45	05/20/24 16:13	1
Malathion	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Methoxychlor	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Metolachlor	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Molinate	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Naphthalene	<0.29		0.29		ug/L		05/18/24 10:45	05/20/24 16:13	1
Parathion	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Phenanthrene	<0.039		0.039		ug/L		05/18/24 10:45	05/20/24 16:13	1
Propachlor	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Pyrene	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Simazine	<0.049		0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Terbacil	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Terbuthylazine	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1
Thiobencarb	<0.19		0.19		ug/L		05/18/24 10:45	05/20/24 16:13	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		05/18/24 10:45	05/20/24 16:13	1
trans-Nonachlor	<0.049	^+	0.049		ug/L		05/18/24 10:45	05/20/24 16:13	1
Trifluralin	<0.097		0.097		ug/L		05/18/24 10:45	05/20/24 16:13	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Camphene	*0.640*	*T J N*	*ug/L*		*2.34*	*79-92-5*	*05/18/24 10:45*	*05/20/24 16:13*	*1*
Cyclopentasiloxane, decamethyl-	*0.521*	*T J N*	*ug/L*		*2.70*	*541-02-6*	*05/18/24 10:45*	*05/20/24 16:13*	*1*
n-Hexadecanoic acid	*0.549*	*T J N*	*ug/L*		*5.86*	*57-10-3*	*05/18/24 10:45*	*05/20/24 16:13*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*99*		*70 - 130*	*05/18/24 10:45*	*05/20/24 16:13*	*1*
Perylene-d12	*91*		*70 - 130*	*05/18/24 10:45*	*05/20/24 16:13*	*1*
Triphenylphosphate	*112*		*70 - 130*	*05/18/24 10:45*	*05/20/24 16:13*	*1*

Lab Sample ID: MRL 380-91165/22-A
Matrix: Water
Analysis Batch: 91323

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91165

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0978	0.115		ug/L		118	50 - 150
2,4'-DDD	0.0978	0.121		ug/L		123	50 - 150
2,4'-DDE	0.0978	0.123		ug/L		126	50 - 150
2,4'-DDT	0.0978	0.141		ug/L		144	50 - 150
2,4-Dinitrotoluene	0.0978	0.109		ug/L		112	50 - 150

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

Lab Sample ID: MRL 380-91165/22-A
Matrix: Water
Analysis Batch: 91323

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91165

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	0.0978	0.110		ug/L		113	50 - 150
2-Methylnaphthalene	0.0978	0.109		ug/L		111	50 - 150
4,4'-DDD	0.0978	0.155	^3+	ug/L		159	50 - 150
4,4'-DDE	0.0978	0.113		ug/L		116	50 - 150
4,4'-DDT	0.0978	0.153	^3+	ug/L		157	50 - 150
Acenaphthene	0.0978	0.0961	J	ug/L		98	50 - 150
Acenaphthylene	0.0978	0.0851	J	ug/L		87	50 - 150
Acetochlor	0.0489	0.0564	J	ug/L		115	50 - 150
Alachlor	0.0489	0.0582		ug/L		119	50 - 150
alpha-BHC	0.0978	0.107		ug/L		109	50 - 150
alpha-Chlordane	0.0244	0.0327	J ^+	ug/L		134	50 - 150
Anthracene	0.0196	0.0194	J	ug/L		99	50 - 150
Atrazine	0.0489	0.0590		ug/L		121	50 - 150
Benz(a)anthracene	0.0489	0.0607		ug/L		124	50 - 150
Benzo[a]pyrene	0.0196	0.0357	^3+	ug/L		183	50 - 150
Benzo[b]fluoranthene	0.0196	0.0361	^3+	ug/L		185	50 - 150
Benzo[g,h,i]perylene	0.0489	0.0584		ug/L		119	50 - 150
Benzo[k]fluoranthene	0.0196	0.0344	^3+	ug/L		176	50 - 150
beta-BHC	0.0978	0.104		ug/L		107	50 - 150
Bis(2-ethylhexyl) phthalate	0.587	0.768		ug/L		131	50 - 150
Bromacil	0.0978	0.137		ug/L		140	50 - 150
Butachlor	0.0489	0.0591		ug/L		121	50 - 150
Butylbenzylphthalate	0.147	0.162	J	ug/L		111	50 - 150
Chlorobenzilate	0.0978	0.0737	J	ug/L		75	50 - 150
Chloroneb	0.0978	0.0986		ug/L		101	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0978	0.101		ug/L		103	50 - 150
Chlorpyrifos	0.0489	0.0652		ug/L		133	50 - 150
Chrysene	0.0196	0.0328	^3+	ug/L		168	50 - 150
delta-BHC	0.0978	0.114		ug/L		116	50 - 150
Di(2-ethylhexyl)adipate	0.293	0.360	J	ug/L		123	50 - 150
Dibenz(a,h)anthracene	0.0489	0.0606		ug/L		124	50 - 150
Diclorvos (DDVP)	0.0489	0.0652		ug/L		133	50 - 150
Dieldrin	0.0978	0.112	J	ug/L		115	50 - 150
Diethylphthalate	0.147	0.157	J	ug/L		107	50 - 150
Dimethylphthalate	0.293	0.308	J	ug/L		105	50 - 150
Di-n-butyl phthalate	0.293	0.334	J	ug/L		114	49 - 243
Di-n-octyl phthalate	0.0978	0.114		ug/L		116	50 - 150
Endosulfan I (Alpha)	0.0978	0.100		ug/L		102	50 - 150
Endosulfan II (Beta)	0.0978	0.125		ug/L		128	50 - 150
Endosulfan sulfate	0.0978	0.130		ug/L		133	50 - 150
Endrin	0.0978	0.109		ug/L		111	50 - 150
Endrin aldehyde	0.0978	0.134		ug/L		137	50 - 150
EPTC	0.0978	0.102		ug/L		104	50 - 150
Fluoranthene	0.0489	0.0610	J	ug/L		125	50 - 150
Fluorene	0.0489	0.0500		ug/L		102	50 - 150
gamma-Chlordane	0.0244	0.0330	J ^+	ug/L		135	50 - 150
Heptachlor	0.0391	0.0454		ug/L		116	50 - 150
Heptachlor epoxide (isomer B)	0.0489	0.0679		ug/L		139	50 - 150
Hexachlorobenzene	0.0489	0.0541		ug/L		111	50 - 150

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

Lab Sample ID: MRL 380-91165/22-A
Matrix: Water
Analysis Batch: 91323

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91165

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorocyclopentadiene	0.0489	0.0758	^3+	ug/L		155	50 - 150
Indeno[1,2,3-cd]pyrene	0.0489	0.0545		ug/L		112	50 - 150
Isophorone	0.0978	0.125	J	ug/L		128	50 - 150
Lindane	0.0391	0.0463		ug/L		118	50 - 150
Malathion	0.0978	0.119		ug/L		122	50 - 150
Methoxychlor	0.0978	0.141		ug/L		144	50 - 150
Metolachlor	0.0489	0.0576		ug/L		118	50 - 150
Molinate	0.0978	0.109		ug/L		111	50 - 150
Naphthalene	0.0978	0.110	J	ug/L		112	50 - 150
Parathion	0.0978	0.106		ug/L		108	50 - 150
Pendimethalin (Penoxaline)	0.0978	0.121		ug/L		124	50 - 150
Phenanthrene	0.0196	0.0234	J	ug/L		120	50 - 150
Propachlor	0.0489	0.0599		ug/L		122	50 - 150
Pyrene	0.0489	0.0710		ug/L		145	50 - 150
Simazine	0.0489	0.0610		ug/L		125	50 - 150
Terbacil	0.0978	0.136		ug/L		139	50 - 150
Terbuthylazine	0.0978	0.127		ug/L		130	50 - 150
Thiobencarb	0.0978	0.121	J	ug/L		124	50 - 150
trans-Nonachlor	0.0244	0.0293	J ^+	ug/L		120	50 - 150
Trifluralin	0.0978	0.103		ug/L		106	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*101*		*70 - 130*
Perylene-d12	*100*		*70 - 130*
Triphenylphosphate	*110*		*70 - 130*

Lab Sample ID: 380-95827-2 MS
Matrix: Water
Analysis Batch: 91323

Client Sample ID: AIEA GULCH WELLS PUMP2
Prep Type: Total/NA
Prep Batch: 91165

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.95	2.16		ug/L		111	70 - 130
2,4'-DDD	<0.098		1.95	2.33		ug/L		120	70 - 130
2,4'-DDE	<0.098		1.95	2.05		ug/L		105	70 - 130
2,4'-DDT	<0.098		1.95	2.33		ug/L		120	70 - 130
2,4-Dinitrotoluene	<0.098		1.95	2.23		ug/L		115	70 - 130
2,6-Dinitrotoluene	<0.098		1.95	2.21		ug/L		114	70 - 130
2-Methylnaphthalene	<0.098		1.95	2.17		ug/L		112	70 - 130
4,4'-DDD	<0.098	^3+	1.95	2.32		ug/L		119	70 - 130
4,4'-DDE	<0.098		1.95	2.35		ug/L		121	70 - 130
4,4'-DDT	<0.098	^3+	1.95	2.50		ug/L		129	70 - 130
Acenaphthene	<0.098		1.95	1.98		ug/L		102	70 - 130
Acenaphthylene	<0.098		1.95	2.07		ug/L		107	70 - 130
Acetochlor	<0.098		1.95	2.41		ug/L		124	70 - 130
Alachlor	<0.049		1.95	2.32		ug/L		119	70 - 130
alpha-BHC	<0.098		1.95	2.04		ug/L		105	70 - 130
alpha-Chlordane	<0.049	F1 ^+	1.95	2.85	F1 ^+	ug/L		146	70 - 130
Anthracene	<0.020		1.95	1.63		ug/L		84	70 - 130

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

Lab Sample ID: 380-95827-2 MS
Matrix: Water
Analysis Batch: 91323

Client Sample ID: AIEA GULCH WELLS PUMP2
Prep Type: Total/NA
Prep Batch: 91165

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Atrazine	<0.049		1.95	2.30		ug/L		118	70 - 130
Benz(a)anthracene	<0.049		1.95	2.30		ug/L		118	70 - 130
Benzo[a]pyrene	<0.020	^3+	1.95	2.23		ug/L		114	70 - 130
Benzo[b]fluoranthene	<0.020	^3+	1.95	2.41		ug/L		124	70 - 130
Benzo[g,h,i]perylene	<0.049	F1	1.95	2.71	F1	ug/L		139	70 - 130
Benzo[k]fluoranthene	<0.020	^3+	1.95	2.37		ug/L		122	70 - 130
beta-BHC	<0.098		1.95	2.15		ug/L		111	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.95	2.39		ug/L		123	70 - 130
Bromacil	<0.098		1.95	2.46		ug/L		126	70 - 130
Butachlor	<0.049		1.95	2.47		ug/L		127	70 - 130
Butylbenzylphthalate	<0.49		1.95	2.32		ug/L		119	70 - 130
Chlorobenzilate	<0.098		1.95	2.00		ug/L		103	70 - 130
Chloroneb	<0.098		1.95	2.19		ug/L		113	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.95	2.01		ug/L		103	70 - 130
Chlorpyrifos	<0.049		1.95	2.20		ug/L		113	70 - 130
Chrysene	<0.020	^3+	1.95	2.33		ug/L		120	70 - 130
delta-BHC	<0.098		1.95	2.12		ug/L		109	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.95	2.46		ug/L		126	70 - 130
Dibenz(a,h)anthracene	<0.049	F1	1.95	2.64	F1	ug/L		136	70 - 130
Diclorvos (DDVP)	<0.049		1.95	2.26		ug/L		116	70 - 130
Dieldrin	<0.20		1.95	2.13		ug/L		109	70 - 130
Diethylphthalate	<0.49		1.95	2.11		ug/L		108	70 - 130
Dimethylphthalate	<0.49		1.95	2.19		ug/L		112	70 - 130
Di-n-butyl phthalate	<0.98		3.89	4.56		ug/L		117	70 - 130
Di-n-octyl phthalate	<0.098		1.95	2.22		ug/L		114	70 - 130
Endosulfan I (Alpha)	<0.098		1.95	2.08		ug/L		107	70 - 130
Endosulfan II (Beta)	<0.098		1.95	2.23		ug/L		115	70 - 130
Endosulfan sulfate	<0.098		1.95	2.31		ug/L		119	70 - 130
Endrin	<0.098		1.95	2.41		ug/L		124	70 - 130
Endrin aldehyde	<0.098		1.95	2.01		ug/L		104	60 - 130
EPTC	<0.098		1.95	2.14		ug/L		110	70 - 130
Fluoranthene	<0.098		1.95	2.40		ug/L		124	70 - 130
Fluorene	<0.049		1.95	2.22		ug/L		114	70 - 130
gamma-Chlordane	<0.049	F1 ^+	1.95	2.94	F1 ^+	ug/L		151	70 - 130
Heptachlor	<0.039		1.95	2.43		ug/L		125	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.95	2.49		ug/L		128	70 - 130
Hexachlorobenzene	<0.049		1.95	2.04		ug/L		105	70 - 130
Hexachlorocyclopentadiene	<0.049	^3+	1.95	1.82		ug/L		93	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049	F1	1.95	2.55	F1	ug/L		131	70 - 130
Isophorone	<0.49		1.95	2.20		ug/L		113	70 - 130
Lindane	<0.039		1.95	1.99		ug/L		102	70 - 130
Malathion	<0.098		1.95	2.30		ug/L		118	70 - 130
Methoxychlor	<0.098		1.95	2.24		ug/L		115	70 - 130
Metolachlor	<0.049		1.95	2.25		ug/L		116	70 - 130
Molinate	<0.098		1.95	2.11		ug/L		109	70 - 130
Naphthalene	<0.29		1.95	2.09		ug/L		107	70 - 130
Parathion	<0.098	F1	1.95	2.56	F1	ug/L		131	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.95	2.25		ug/L		116	70 - 130
Phenanthrene	<0.039		1.95	2.21		ug/L		114	70 - 130

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

Lab Sample ID: 380-95827-2 MS
Matrix: Water
Analysis Batch: 91323

Client Sample ID: AIEA GULCH WELLS PUMP2
Prep Type: Total/NA
Prep Batch: 91165

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Propachlor	<0.049		1.95	2.16		ug/L		111	70 - 130
Pyrene	<0.049		1.95	2.24		ug/L		115	70 - 130
Simazine	<0.049		1.95	2.19		ug/L		112	70 - 130
Terbacil	<0.098		1.95	2.00		ug/L		103	70 - 130
Terbuthylazine	<0.098		1.95	2.17		ug/L		111	70 - 130
Thiobencarb	<0.20		1.95	2.38		ug/L		122	70 - 130
trans-Nonachlor	<0.049	F1 ^+	1.95	2.72	F1 ^+	ug/L		140	70 - 130
Trifluralin	<0.098		1.95	1.90		ug/L		98	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*98*		*70 - 130*
Perylene-d12	*105*		*70 - 130*
Triphenylphosphate	*118*		*70 - 130*

Lab Sample ID: 380-95827-1 DU
Matrix: Water
Analysis Batch: 91323

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 91165

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.098		<0.097		ug/L		NC	20
2,4'-DDD	<0.098		<0.097		ug/L		NC	20
2,4'-DDE	<0.098		<0.097		ug/L		NC	20
2,4'-DDT	<0.098		<0.097		ug/L		NC	20
2,4-Dinitrotoluene	<0.098		<0.097		ug/L		NC	20
2,6-Dinitrotoluene	<0.098		<0.097		ug/L		NC	20
2-Methylnaphthalene	<0.098		<0.097		ug/L		NC	20
4,4'-DDD	<0.098	^3+	<0.097		ug/L		NC	20
4,4'-DDE	<0.098		<0.097		ug/L		NC	20
4,4'-DDT	<0.098	^3+	<0.097		ug/L		NC	20
Acenaphthene	<0.098		<0.097		ug/L		NC	20
Acenaphthylene	<0.098		<0.097		ug/L		NC	20
Acetochlor	<0.098		<0.097		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.098		<0.097		ug/L		NC	20
alpha-Chlordane	<0.049	^+	<0.049	^+	ug/L		NC	20
Anthracene	<0.020		<0.019		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.020	^3+	<0.019		ug/L		NC	20
Benzo[b]fluoranthene	<0.020	^3+	<0.019		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020	^3+	<0.019		ug/L		NC	20
beta-BHC	<0.098		<0.097		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.58		ug/L		NC	20
Bromacil	<0.098		<0.097		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.098		<0.097		ug/L		NC	20

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

Lab Sample ID: 380-95827-1 DU
Matrix: Water
Analysis Batch: 91323

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 91165

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chloroneb	<0.098			<0.097		ug/L				NC	20
Chlorothalonil (Draconil, Bravo)	<0.098			<0.097		ug/L				NC	20
Chlorpyrifos	<0.049			<0.049		ug/L				NC	20
Chrysene	<0.020	^3+		<0.019		ug/L				NC	20
delta-BHC	<0.098			<0.097		ug/L				NC	20
Di(2-ethylhexyl)adipate	<0.59			<0.58		ug/L				NC	20
Dibenz(a,h)anthracene	<0.049			<0.049		ug/L				NC	20
Diclorvos (DDVP)	<0.049			<0.049		ug/L				NC	20
Dieldrin	<0.20			<0.19		ug/L				NC	20
Diethylphthalate	<0.49			<0.49		ug/L				NC	20
Dimethylphthalate	<0.49			<0.49		ug/L				NC	20
Di-n-butyl phthalate	<0.98			<0.97		ug/L				NC	20
Di-n-octyl phthalate	<0.098			<0.097		ug/L				NC	20
Endosulfan I (Alpha)	<0.098			<0.097		ug/L				NC	20
Endosulfan II (Beta)	<0.098			<0.097		ug/L				NC	20
Endosulfan sulfate	<0.098			<0.097		ug/L				NC	20
Endrin	<0.098			<0.097		ug/L				NC	20
Endrin aldehyde	<0.098			<0.097		ug/L				NC	20
EPTC	<0.098			<0.097		ug/L				NC	20
Fluoranthene	<0.098			<0.097		ug/L				NC	20
Fluorene	<0.049			<0.049		ug/L				NC	20
gamma-Chlordane	<0.049	^+		<0.049	^+	ug/L				NC	20
Heptachlor	<0.039			<0.039		ug/L				NC	20
Heptachlor epoxide (isomer B)	<0.049			<0.049		ug/L				NC	20
Hexachlorobenzene	<0.049			<0.049		ug/L				NC	20
Hexachlorocyclopentadiene	<0.049	^3+		<0.049		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	<0.049			<0.049		ug/L				NC	20
Isophorone	<0.49			<0.49		ug/L				NC	20
Lindane	<0.039			<0.039		ug/L				NC	20
Malathion	<0.098			<0.097		ug/L				NC	20
Methoxychlor	<0.098			<0.097		ug/L				NC	20
Metolachlor	<0.049			<0.049		ug/L				NC	20
Molinate	<0.098			<0.097		ug/L				NC	20
Naphthalene	<0.29			<0.29		ug/L				NC	20
Parathion	<0.098			<0.097		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.098			<0.097		ug/L				NC	20
Phenanthrene	<0.039			<0.039		ug/L				NC	20
Propachlor	<0.049			<0.049		ug/L				NC	20
Pyrene	<0.049			<0.049		ug/L				NC	20
Simazine	<0.049			<0.049		ug/L				NC	20
Terbacil	<0.098			<0.097		ug/L				NC	20
Terbuthylazine	<0.098			<0.097		ug/L				NC	20
Thiobencarb	<0.20			<0.19		ug/L				NC	20
Total Permethrin (mixed isomers)	<0.20			<0.19		ug/L				NC	20
trans-Nonachlor	<0.049	^+		<0.049	^+	ug/L				NC	20
Trifluralin	<0.098			<0.097		ug/L				NC	20

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

Lab Sample ID: 380-95827-1 DU
Matrix: Water
Analysis Batch: 91323

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 91165

Surrogate	DU %Recovery	DU Qualifier	Limits
2-Nitro-m-xylene	93		70 - 130
Perylene-d12	99		70 - 130
Triphenylphosphate	110		70 - 130

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

Lab Sample ID: MBL 380-90984/20-A
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90984

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		05/17/24 05:06	05/18/24 05:11	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	05/17/24 05:06	05/18/24 05:11	1

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

Lab Sample ID: MBL 380-90984/20-A
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90984

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	80		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C5 PFHxA	82		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C4 PFHpA	80		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C8 PFOA	82		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C9 PFNA	80		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C7 PFUnA	81		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C2 PFDoA	78		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C4 PFBA	80		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C5 PFPeA	83		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C3 PFBS	90		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C3 PFHxS	89		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C8 PFOS	89		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C2-4:2-FTS	83		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C2-6:2-FTS	83		50 - 200	05/17/24 05:06	05/18/24 05:11	1
13C2-8:2-FTS	76		50 - 200	05/17/24 05:06	05/18/24 05:11	1

Lab Sample ID: LCS 380-90984/22-A
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90984

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	120		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	116		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	123		ng/L		102	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	111		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	117		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	120	111		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	120	122		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	126		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	122		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	120	121		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	120	119		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	122		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	120	119		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	119		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	120	117		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	117		ng/L		97	70 - 130

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

Lab Sample ID: LCS 380-90984/22-A
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90984

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	115		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	122		ng/L		101	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	116		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	115		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	116		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	120	114		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	125		ng/L		104	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	118		ng/L		98	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*86*		*50 - 200*
13C6 PFDA	*83*		*50 - 200*
13C5 PFHxA	*86*		*50 - 200*
13C4 PFHpA	*83*		*50 - 200*
13C8 PFOA	*87*		*50 - 200*
13C9 PFNA	*83*		*50 - 200*
13C7 PFUnA	*82*		*50 - 200*
13C2 PFDoA	*76*		*50 - 200*
13C4 PFBA	*85*		*50 - 200*
13C5 PFPeA	*88*		*50 - 200*
13C3 PFBS	*91*		*50 - 200*
13C3 PFHxS	*89*		*50 - 200*
13C8 PFOS	*86*		*50 - 200*
13C2-4:2-FTS	*83*		*50 - 200*
13C2-6:2-FTS	*85*		*50 - 200*
13C2-8:2-FTS	*77*		*50 - 200*

Lab Sample ID: MRL 380-90984/21-A
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90984

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.97	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.93	J	ng/L		96	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.03	J	ng/L		101	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.02	J	ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.10	J	ng/L		104	50 - 150

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

Lab Sample ID: MRL 380-90984/21-A
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90984

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorododecanoic acid (PFDoA)	2.01	2.10	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.53	J	ng/L		126	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.32	J	ng/L		116	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.05	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.15	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.21	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.24	J	ng/L		112	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.95	J	ng/L		97	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.95	J	ng/L		97	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.19	J	ng/L		109	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.82	J	ng/L		91	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*79*		*50 - 200*
13C6 PFDA	*80*		*50 - 200*
13C5 PFHxA	*82*		*50 - 200*
13C4 PFHpA	*81*		*50 - 200*
13C8 PFOA	*87*		*50 - 200*
13C9 PFNA	*82*		*50 - 200*
13C7 PFUnA	*79*		*50 - 200*
13C2 PFDoA	*76*		*50 - 200*
13C4 PFBA	*83*		*50 - 200*
13C5 PFPeA	*83*		*50 - 200*
13C3 PFBS	*88*		*50 - 200*
13C3 PFHxS	*91*		*50 - 200*
13C8 PFOS	*86*		*50 - 200*
13C2-4:2-FTS	*78*		*50 - 200*
13C2-6:2-FTS	*73*		*50 - 200*
13C2-8:2-FTS	*71*		*50 - 200*

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

Lab Sample ID: 380-95864-E-1-A MS
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 90984

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	107		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	108		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	119		ng/L		99	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	115		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	120		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	121		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	125		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	128		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	122		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	121		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	117		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	115		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	122		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	119		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	116		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	120		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	123		ng/L		101	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	123		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	115		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	110		ng/L		91	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	114		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	121		ng/L		100	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	120		ng/L		99	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*65*		*50 - 200*
13C6 PFDA	*69*		*50 - 200*
13C5 PFHxA	*68*		*50 - 200*
13C4 PFHpA	*64*		*50 - 200*
13C8 PFOA	*69*		*50 - 200*
13C9 PFNA	*71*		*50 - 200*

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

Lab Sample ID: 380-95864-E-1-A MS
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 90984

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C7 PFUnA	71		50 - 200
13C2 PFDoA	67		50 - 200
13C4 PFBA	75		50 - 200
13C5 PFPeA	74		50 - 200
13C3 PFBS	90		50 - 200
13C3 PFHxS	85		50 - 200
13C8 PFOS	90		50 - 200
13C2-4:2-FTS	86		50 - 200
13C2-6:2-FTS	82		50 - 200
13C2-8:2-FTS	75		50 - 200

Lab Sample ID: 380-95864-F-1-A MSD
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 90984

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	116		ng/L		96	70 - 130	8	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	115		ng/L		95	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	115		ng/L		96	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	118		ng/L		97	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	117		ng/L		97	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		121	117		ng/L		97	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	118		ng/L		98	70 - 130	5	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	120		ng/L		99	70 - 130	6	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	122		ng/L		101	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		121	121		ng/L		100	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		121	125		ng/L		103	70 - 130	6	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	122		ng/L		101	70 - 130	6	30
Perfluorooctanoic acid (PFOA)	<2.0		121	119		ng/L		98	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	126		ng/L		104	70 - 130	6	30
Perfluorobutanoic acid (PFBA)	<2.0		121	122		ng/L		101	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	120		ng/L		100	70 - 130	3	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	116		ng/L		96	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	123		ng/L		102	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	122		ng/L		101	70 - 130	0	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	118		ng/L		98	70 - 130	4	30

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

Lab Sample ID: 380-95864-F-1-A MSD
Matrix: Water
Analysis Batch: 91106

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 90984

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	117		ng/L		97	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	110		ng/L		91	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		121	113		ng/L		94	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	123		ng/L		102	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	119		ng/L		99	70 - 130	1	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*76*		*50 - 200*
13C6 PFDA	*75*		*50 - 200*
13C5 PFHxA	*77*		*50 - 200*
13C4 PFHpA	*78*		*50 - 200*
13C8 PFOA	*77*		*50 - 200*
13C9 PFNA	*72*		*50 - 200*
13C7 PFUnA	*72*		*50 - 200*
13C2 PFDoA	*71*		*50 - 200*
13C4 PFBA	*80*		*50 - 200*
13C5 PFPeA	*85*		*50 - 200*
13C3 PFBS	*88*		*50 - 200*
13C3 PFHxS	*85*		*50 - 200*
13C8 PFOS	*85*		*50 - 200*
13C2-4:2-FTS	*84*		*50 - 200*
13C2-6:2-FTS	*77*		*50 - 200*
13C2-8:2-FTS	*72*		*50 - 200*

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

Lab Sample ID: MBL 380-90786/22-A
Matrix: Water
Analysis Batch: 90908

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90786

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1

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

Lab Sample ID: MBL 380-90786/22-A
Matrix: Water
Analysis Batch: 90908

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90786

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/16/24 07:57	05/16/24 18:47	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*95*		*70 - 130*	*05/16/24 07:57*	*05/16/24 18:47*	*1*
13C2 PFHxA	*95*		*70 - 130*	*05/16/24 07:57*	*05/16/24 18:47*	*1*
13C2 PFDA	*94*		*70 - 130*	*05/16/24 07:57*	*05/16/24 18:47*	*1*
13C3-GenX	*93*		*70 - 130*	*05/16/24 07:57*	*05/16/24 18:47*	*1*

Lab Sample ID: LCS 380-90786/24-A
Matrix: Water
Analysis Batch: 90908

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90786

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			50.0	51.2		ng/L		102	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			50.0	52.8		ng/L		106	70 - 130		
Perfluoroundecanoic acid (PFUnA)			50.0	52.5		ng/L		105	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			50.0	52.8		ng/L		106	70 - 130		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			50.0	53.2		ng/L		106	70 - 130		
Perfluorohexanoic acid (PFHxA)			50.0	51.9		ng/L		104	70 - 130		
Perfluorododecanoic acid (PFDoA)			50.0	49.5		ng/L		99	70 - 130		
Perfluorooctanoic acid (PFOA)			50.0	54.4		ng/L		109	70 - 130		
Perfluorodecanoic acid (PFDA)			50.0	50.6		ng/L		101	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			50.0	54.1		ng/L		108	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			50.0	44.8		ng/L		90	70 - 130		
Perfluoroheptanoic acid (PFHpA)			50.0	55.5		ng/L		111	70 - 130		
Perfluorononanoic acid (PFNA)			50.0	50.7		ng/L		101	70 - 130		
Perfluorotetradecanoic acid (PFTA)			50.0	55.3		ng/L		111	70 - 130		
Perfluorotridecanoic acid (PFTrDA)			50.0	50.1		ng/L		100	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			50.0	51.8		ng/L		104	70 - 130		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			50.0	49.2		ng/L		98	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			50.0	53.3		ng/L		107	70 - 130		

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	96		70 - 130
13C2 PFDA	95		70 - 130
13C3-GenX	95		70 - 130

Lab Sample ID: MRL 380-90786/23-A
Matrix: Water
Analysis Batch: 90908

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90786

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.06	J	ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.03	J	ng/L		101	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.02	J	ng/L		101	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.71	J	ng/L		85	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.01	J	ng/L		101	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	1.98	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.94	J	ng/L		97	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.78	J	ng/L		89	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.02	J	ng/L		101	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	99		70 - 130
13C2 PFHxA	99		70 - 130
13C2 PFDA	102		70 - 130
13C3-GenX	94		70 - 130

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

Lab Sample ID: 380-95940-B-31-A MS
Matrix: Water
Analysis Batch: 90908

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 90786

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		50.1	50.1		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.1		50.1	55.2		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	50.3		ng/L		100	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	53.7		ng/L		107	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	52.7		ng/L		105	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.1	50.7		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	48.5		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.1	57.9		ng/L		113	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.1	48.7		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.1	54.2		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	2.0		50.1	50.7		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.1	52.4		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.1	49.3		ng/L		98	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.1	51.4		ng/L		103	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.1	49.2		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.1	50.6		ng/L		101	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.1	48.5		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.1	52.5		ng/L		105	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*108*		*70 - 130*
13C2 PFHxA	*106*		*70 - 130*
13C2 PFDA	*100*		*70 - 130*
13C3-GenX	*103*		*70 - 130*

Lab Sample ID: 380-95940-C-31-A MSD
Matrix: Water
Analysis Batch: 90908

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 90786

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		50.2	50.0		ng/L		100	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	2.1		50.2	53.4		ng/L		102	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	49.0		ng/L		98	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	53.2		ng/L		106	70 - 130	1	30

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

Lab Sample ID: 380-95940-C-31-A MSD
Matrix: Water
Analysis Batch: 90908

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 90786

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	53.1		ng/L		106	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	50.9		ng/L		99	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	48.2		ng/L		96	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	56.3		ng/L		109	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	48.7		ng/L		97	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	51.2		ng/L		101	70 - 130	6	30
Perfluorobutanesulfonic acid (PFBS)	2.0		50.2	51.7		ng/L		99	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	53.5		ng/L		106	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	49.9		ng/L		99	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	50.4		ng/L		100	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	46.4		ng/L		92	70 - 130	6	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	49.6		ng/L		99	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	44.3		ng/L		88	70 - 130	9	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	51.0		ng/L		102	70 - 130	3	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*102*		*70 - 130*
13C2 PFHxA	*103*		*70 - 130*
13C2 PFDA	*98*		*70 - 130*
13C3-GenX	*98*		*70 - 130*

GC/MS Semi VOA

Prep Batch: 91165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95827-1	MOANALUA WELLS	Total/NA	Water	525.2	
380-95827-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	525.2	
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	525.2	
MB 380-91165/21-A	Method Blank	Total/NA	Water	525.2	
MRL 380-91165/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-95827-2 MS	AIEA GULCH WELLS PUMP2	Total/NA	Water	525.2	
380-95827-1 DU	MOANALUA WELLS	Total/NA	Water	525.2	

Analysis Batch: 91323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95827-1	MOANALUA WELLS	Total/NA	Water	525.2	91165
380-95827-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	525.2	91165
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	91165
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	525.2	91165
MB 380-91165/21-A	Method Blank	Total/NA	Water	525.2	91165
MRL 380-91165/22-A	Lab Control Sample	Total/NA	Water	525.2	91165
380-95827-2 MS	AIEA GULCH WELLS PUMP2	Total/NA	Water	525.2	91165
380-95827-1 DU	MOANALUA WELLS	Total/NA	Water	525.2	91165

LCMS

Prep Batch: 90786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95827-1	MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-95827-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1 DW	
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
380-95827-5	FB MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-95827-6	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1 DW	
380-95827-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-95827-8	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
MBL 380-90786/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-90786/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-90786/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-95940-B-31-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-95940-C-31-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 90908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95827-1	MOANALUA WELLS	Total/NA	Water	537.1	90786
380-95827-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1	90786
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	90786
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	90786
380-95827-5	FB MOANALUA WELLS	Total/NA	Water	537.1	90786
380-95827-6	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1	90786
380-95827-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	90786
380-95827-8	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	90786
MBL 380-90786/22-A	Method Blank	Total/NA	Water	537.1	90786
LCS 380-90786/24-A	Lab Control Sample	Total/NA	Water	537.1	90786
MRL 380-90786/23-A	Lab Control Sample	Total/NA	Water	537.1	90786

LCMS (Continued)

Analysis Batch: 90908 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95940-B-31-A MS	Matrix Spike	Total/NA	Water	537.1	90786
380-95940-C-31-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	90786

Prep Batch: 90984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95827-1	MOANALUA WELLS	Total/NA	Water	533	
380-95827-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	533	
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
380-95827-5	FB MOANALUA WELLS	Total/NA	Water	533	
380-95827-6	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	533	
380-95827-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-95827-8	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
MBL 380-90984/20-A	Method Blank	Total/NA	Water	533	
LCS 380-90984/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-90984/21-A	Lab Control Sample	Total/NA	Water	533	
380-95864-E-1-A MS	Matrix Spike	Total/NA	Water	533	
380-95864-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 91106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95827-1	MOANALUA WELLS	Total/NA	Water	533	90984
380-95827-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	533	90984
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	90984
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	90984
380-95827-5	FB MOANALUA WELLS	Total/NA	Water	533	90984
380-95827-6	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	533	90984
380-95827-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	90984
380-95827-8	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	90984
MBL 380-90984/20-A	Method Blank	Total/NA	Water	533	90984
LCS 380-90984/22-A	Lab Control Sample	Total/NA	Water	533	90984
MRL 380-90984/21-A	Lab Control Sample	Total/NA	Water	533	90984
380-95864-E-1-A MS	Matrix Spike	Total/NA	Water	533	90984
380-95864-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	90984

Lab Chronicle

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Lab Sample ID: 380-95827-1
Date Collected: 05/13/24 09:55
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			91165	KRD3	EA POM	05/18/24 12:45
Total/NA	Analysis	525.2		1	91323	UPAC	EA POM	05/20/24 16:53
Total/NA	Prep	533			90984	XTD8	EA POM	05/17/24 05:06
Total/NA	Analysis	533		1	91106	M7ML	EA POM	05/18/24 06:10
Total/NA	Prep	537.1 DW			90786	SL5Q	EA POM	05/16/24 07:57
Total/NA	Analysis	537.1		1	90908	Y5FM	EA POM	05/16/24 20:02

Client Sample ID: AIEA GULCH WELLS PUMP2
Lab Sample ID: 380-95827-2
Date Collected: 05/13/24 10:50
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			91165	KRD3	EA POM	05/18/24 12:45
Total/NA	Analysis	525.2		1	91323	UPAC	EA POM	05/20/24 16:33
Total/NA	Prep	533			90984	XTD8	EA POM	05/17/24 05:06
Total/NA	Analysis	533		1	91106	M7ML	EA POM	05/18/24 06:20
Total/NA	Prep	537.1 DW			90786	SL5Q	EA POM	05/16/24 07:57
Total/NA	Analysis	537.1		1	90908	Y5FM	EA POM	05/16/24 20:13

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-95827-3
Date Collected: 05/13/24 11:13
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			91165	KRD3	EA POM	05/18/24 12:45
Total/NA	Analysis	525.2		1	91323	UPAC	EA POM	05/20/24 17:13
Total/NA	Prep	533			90984	XTD8	EA POM	05/17/24 05:06
Total/NA	Analysis	533		1	91106	M7ML	EA POM	05/18/24 06:30
Total/NA	Prep	537.1 DW			90786	SL5Q	EA POM	05/16/24 07:57
Total/NA	Analysis	537.1		1	90908	Y5FM	EA POM	05/16/24 20:24

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-95827-4
Date Collected: 05/13/24 10:21
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			91165	KRD3	EA POM	05/18/24 12:45
Total/NA	Analysis	525.2		1	91323	UPAC	EA POM	05/20/24 17:33
Total/NA	Prep	533			90984	XTD8	EA POM	05/17/24 05:06
Total/NA	Analysis	533		1	91106	M7ML	EA POM	05/18/24 06:39
Total/NA	Prep	537.1 DW			90786	SL5Q	EA POM	05/16/24 07:57
Total/NA	Analysis	537.1		1	90908	Y5FM	EA POM	05/16/24 20:34

Lab Chronicle

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB MOANALUA WELLS
Lab Sample ID: 380-95827-5
Date Collected: 05/13/24 09:55
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			90984	XTD8	EA POM	05/17/24 05:06
Total/NA	Analysis	533		1	91106	M7ML	EA POM	05/18/24 06:49
Total/NA	Prep	537.1 DW			90786	SL5Q	EA POM	05/16/24 07:57
Total/NA	Analysis	537.1		1	90908	Y5FM	EA POM	05/16/24 20:45

Client Sample ID: FB AIEA GULCH WELLS PUMP2
Lab Sample ID: 380-95827-6
Date Collected: 05/13/24 10:50
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			90984	XTD8	EA POM	05/17/24 05:06
Total/NA	Analysis	533		1	91106	M7ML	EA POM	05/18/24 06:59
Total/NA	Prep	537.1 DW			90786	SL5Q	EA POM	05/16/24 07:57
Total/NA	Analysis	537.1		1	90908	Y5FM	EA POM	05/16/24 20:56

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-95827-7
Date Collected: 05/13/24 11:13
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			90984	XTD8	EA POM	05/17/24 05:06
Total/NA	Analysis	533		1	91106	M7ML	EA POM	05/18/24 07:08
Total/NA	Prep	537.1 DW			90786	SL5Q	EA POM	05/16/24 07:57
Total/NA	Analysis	537.1		1	90908	Y5FM	EA POM	05/16/24 21:06

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-95827-8
Date Collected: 05/13/24 10:21
Matrix: Water
Date Received: 05/15/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			90984	XTD8	EA POM	05/17/24 05:06
Total/NA	Analysis	533		1	91106	M7ML	EA POM	05/18/24 07:18
Total/NA	Prep	537.1 DW			90786	SL5Q	EA POM	05/16/24 07:57
Total/NA	Analysis	537.1		1	90908	Y5FM	EA POM	05/16/24 21:17

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

Accreditation/Certification Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

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	01-31-25

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	Water	1-Methylnaphthalene
525.2	525.2	Water	2,4'-DDD
525.2	525.2	Water	2,4'-DDE
525.2	525.2	Water	2,4'-DDT
525.2	525.2	Water	2,4-Dinitrotoluene
525.2	525.2	Water	2,6-Dinitrotoluene
525.2	525.2	Water	2-Methylnaphthalene
525.2	525.2	Water	4,4'-DDD
525.2	525.2	Water	4,4'-DDE
525.2	525.2	Water	4,4'-DDT
525.2	525.2	Water	Acetochlor
525.2	525.2	Water	alpha-BHC
525.2	525.2	Water	alpha-Chlordane
525.2	525.2	Water	beta-BHC
525.2	525.2	Water	Chlorobenzilate
525.2	525.2	Water	Chloroneb
525.2	525.2	Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Water	Chlorpyrifos
525.2	525.2	Water	delta-BHC
525.2	525.2	Water	Diclorvos (DDVP)
525.2	525.2	Water	Endosulfan I (Alpha)
525.2	525.2	Water	Endosulfan II (Beta)
525.2	525.2	Water	Endosulfan sulfate
525.2	525.2	Water	Endrin aldehyde
525.2	525.2	Water	EPTC
525.2	525.2	Water	gamma-Chlordane
525.2	525.2	Water	Isophorone
525.2	525.2	Water	Malathion
525.2	525.2	Water	Parathion
525.2	525.2	Water	Pendimethalin (Penoxaline)
525.2	525.2	Water	Terbacil
525.2	525.2	Water	Terbuthylazine
525.2	525.2	Water	Total Permethrin (mixed isomers)
525.2	525.2	Water	trans-Nonachlor

Method Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
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

Laboratory References:

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

Sample Summary

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

Job ID: 380-95827-1
SDG: 525.2, 533, 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-95827-1	MOANALUA WELLS	Water	05/13/24 09:55	05/15/24 10:20
380-95827-2	AIEA GULCH WELLS PUMP2	Water	05/13/24 10:50	05/15/24 10:20
380-95827-3	AIEA WELLS PUMPS 1&2 (260) P2	Water	05/13/24 11:13	05/15/24 10:20
380-95827-4	HALAWA WELLS UNITS 1 & 2 P1	Water	05/13/24 10:21	05/15/24 10:20
380-95827-5	FB MOANALUA WELLS	Water	05/13/24 09:55	05/15/24 10:20
380-95827-6	FB AIEA GULCH WELLS PUMP2	Water	05/13/24 10:50	05/15/24 10:20
380-95827-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	05/13/24 11:13	05/15/24 10:20
380-95827-8	FB HALAWA WELLS UNITS 1 & 2 P1	Water	05/13/24 10:21	05/15/24 10:20

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

Chain of Custody Record

eurofins

Client Information	Sampler: bailey	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757 2
Client Contact: Dr Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle Arada@et euronisus com	State of Origin:	Page: Page 2 of 3
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street, Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8 C18	525 2_PREC - (MOD) 525plus PLUS TICs	537 1_DW_PREC - 537 1 Full List	533 All Analytes	Total Number of containers	Special Instructions/Note.
			Preservation Code				R	A	Q	QA	Y	I		
MOANALUA WELLS	13-May-2024	0955	G	Water							3	3		chlorinated
AIEA GULCH WELLS PUMP2	13-May-2024	1050	G	Water							3	3		chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	13-May-2024	1113	G	Water							3	3		
HALAWA WELLS UNITS 1&2 P1	13-May-2024	1021	G	Water							3	3		
FB MOANALUA WELLS	13-May-2024	0955		Water							1	1		
FB AIEA GULCH WELLS PUMP2	13-May-2024	1050		Water							1	1		
FB AIEA WELLS PUMPS 1&2 (260)	13-May-2024	1113		Water							1	1		
FB HALAWA WELLS UNITS 1&2	13-May-2024	1021		Water							1	1		

380-95827 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II, III, IV, Other (specify)

Special Instructions/QC Requirements
① 7763 8143 1874
② 7763 8143 1885

Empty Kit Relinquished by	Date	Time	Method of Shipment: FED EX ③ 7763 8143 1896

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
bailey	14May2024 1400	HBWS	E.REITNER	05/15/2024 10:20	EEAP
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 (751A) ① 5.4°-0.1°-5.3° ② 3.4°-0.1°-3.3° ③ 0.9°-0.1°-0.8° GEL-FROZEN

Ver. 01/16/2019

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5/22/2024

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-95827-1
SDG Number: 525.2, 533, 537.1

Login Number: 95827
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	

eurofins | Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

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

Generated 6/18/2024 5:53:33 PM

JOB DESCRIPTION

RED-HILL
625, 8015
RUSH Weekly Red Hill

JOB NUMBER

380-95026-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

myEOL

Eurofins Eaton Analytical Pomona

Job Notes

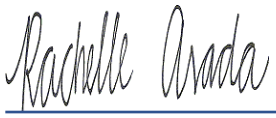
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-95026-1
SDG: 625, 8015

Glossary

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

Job Narrative
380-95026-1

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 5/9/2024 10:44 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 3.5°C and 4.8°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.

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

Diesel Range Organics
Method 8015B_DRO_LL_CS: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-440703. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

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

Detection Summary

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

Job ID: 380-95026-1
SDG: 625, 8015

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-95026-1
PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-95026-2
PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95026-3
PWSID Number: HI0000331

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95026-4
PWSID Number: HI0000331

No Detections.

Client Sample ID: TB MOANALUA WELLS — Lab Sample ID: 380-95026-5

No Detections.

Client Sample ID: TB AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-95026-6

No Detections.

Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95026-7

No Detections.

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95026-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MOANALUA WELLS

Date Collected: 05/07/24 09:34
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95026-1

Matrix: Drinking Water
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			05/16/24 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*38 - 134*		*05/16/24 19:21*	*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)	<27		27		ug/L		05/14/24 22:42	05/27/24 22:32	1
Motor Oil Range Organics [C24-C36]	<27		27		ug/L		05/14/24 22:42	05/27/24 22:32	1
C8-C18	<27		27		ug/L		05/14/24 22:42	05/27/24 22:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*103*		*60 - 130*	*05/14/24 22:42*	*05/27/24 22:32*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Acenaphthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Biphenyl	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Chrysene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/10/24 00:00	06/09/24 08:32	1
Fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Fluorene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Naphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Phenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1
Pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 08:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*74*		*27 - 133*	*05/10/24 00:00*	*06/09/24 08:32*	*1*
(d10-Phenanthrene)	*81*		*43 - 129*	*05/10/24 00:00*	*06/09/24 08:32*	*1*
(d12-Chrysene)	*97*		*52 - 144*	*05/10/24 00:00*	*06/09/24 08:32*	*1*
(d12-Perylene)	*84*		*36 - 161*	*05/10/24 00:00*	*06/09/24 08:32*	*1*
(d8-Naphthalene)	*69*		*25 - 125*	*05/10/24 00:00*	*06/09/24 08:32*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 05/07/24 10:30
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95026-2

Matrix: Drinking Water
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			05/16/24 19:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*38 - 134*		*05/16/24 19:47*	*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)	<27		27		ug/L		05/14/24 22:42	05/27/24 22:53	1
Motor Oil Range Organics [C24-C36]	<27		27		ug/L		05/14/24 22:42	05/27/24 22:53	1
C8-C18	<27		27		ug/L		05/14/24 22:42	05/27/24 22:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*102*		*60 - 130*	*05/14/24 22:42*	*05/27/24 22:53*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Acenaphthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Biphenyl	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Chrysene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/10/24 00:00	06/09/24 10:21	1
Fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Fluorene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Naphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Phenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1
Pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 10:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*98*		*27 - 133*	*05/10/24 00:00*	*06/09/24 10:21*	*1*
(d10-Phenanthrene)	*100*		*43 - 129*	*05/10/24 00:00*	*06/09/24 10:21*	*1*
(d12-Chrysene)	*107*		*52 - 144*	*05/10/24 00:00*	*06/09/24 10:21*	*1*
(d12-Perylene)	*107*		*36 - 161*	*05/10/24 00:00*	*06/09/24 10:21*	*1*
(d8-Naphthalene)	*86*		*25 - 125*	*05/10/24 00:00*	*06/09/24 10:21*	*1*

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

Date Collected: 05/07/24 11:07
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95026-3

Matrix: Drinking Water
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			05/16/24 20:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*38 - 134*		*05/16/24 20:13*	*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)	<26		26		ug/L		05/14/24 22:42	05/27/24 23:14	1
Motor Oil Range Organics [C24-C36]	<26		26		ug/L		05/14/24 22:42	05/27/24 23:14	1
C8-C18	<26		26		ug/L		05/14/24 22:42	05/27/24 23:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*101*		*60 - 130*	*05/14/24 22:42*	*05/27/24 23:14*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Acenaphthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Biphenyl	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Chrysene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/10/24 00:00	06/09/24 12:10	1
Fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Fluorene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Naphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Phenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1
Pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 12:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*88*		*27 - 133*	*05/10/24 00:00*	*06/09/24 12:10*	*1*
(d10-Phenanthrene)	*93*		*43 - 129*	*05/10/24 00:00*	*06/09/24 12:10*	*1*
(d12-Chrysene)	*104*		*52 - 144*	*05/10/24 00:00*	*06/09/24 12:10*	*1*
(d12-Perylene)	*93*		*36 - 161*	*05/10/24 00:00*	*06/09/24 12:10*	*1*
(d8-Naphthalene)	*79*		*25 - 125*	*05/10/24 00:00*	*06/09/24 12:10*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 05/07/24 10:01
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95026-4

Matrix: Drinking Water
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			05/16/24 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*38 - 134*		*05/16/24 20:40*	*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)	<26		26		ug/L		05/14/24 22:42	05/27/24 23:34	1
Motor Oil Range Organics [C24-C36]	<26		26		ug/L		05/14/24 22:42	05/27/24 23:34	1
C8-C18	<26		26		ug/L		05/14/24 22:42	05/27/24 23:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*97*		*60 - 130*	*05/14/24 22:42*	*05/27/24 23:34*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Acenaphthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Biphenyl	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Chrysene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/10/24 00:00	06/09/24 13:59	1
Fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Fluorene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Naphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Phenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1
Pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*97*		*27 - 133*	*05/10/24 00:00*	*06/09/24 13:59*	*1*
(d10-Phenanthrene)	*102*		*43 - 129*	*05/10/24 00:00*	*06/09/24 13:59*	*1*
(d12-Chrysene)	*111*		*52 - 144*	*05/10/24 00:00*	*06/09/24 13:59*	*1*
(d12-Perylene)	*102*		*36 - 161*	*05/10/24 00:00*	*06/09/24 13:59*	*1*
(d8-Naphthalene)	*86*		*25 - 125*	*05/10/24 00:00*	*06/09/24 13:59*	*1*

Client Sample ID: TB MOANALUA WELLS
Lab Sample ID: 380-95026-5
Date Collected: 05/07/24 09:34
Matrix: Water
Date Received: 05/09/24 10:44

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			05/16/24 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*38 - 134*		*05/16/24 17:37*	*1*

Client Sample ID: TB AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-95026-6
Date Collected: 05/07/24 10:30
Matrix: Water
Date Received: 05/09/24 10:44

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			05/16/24 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*38 - 134*		*05/16/24 18:03*	*1*

Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-95026-7
Date Collected: 05/07/24 11:07
Matrix: Water
Date Received: 05/09/24 10:44

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			05/16/24 18:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*38 - 134*		*05/16/24 18:29*	*1*

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-95026-8
Date Collected: 05/07/24 10:01
Matrix: Water
Date Received: 05/09/24 10:44

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			05/16/24 18:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*38 - 134*		*05/16/24 18:55*	*1*

Surrogate Summary

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

Job ID: 380-95026-1
SDG: 625, 8015

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)
380-95026-1	MOANALUA WELLS	108
380-95026-2	AIEA GULCH WELLS PUMP 2	105
380-95026-3	AIEA WELLS PUMPS 1&2 (260) P2	116
380-95026-4	HALAWA WELLS UNITS 1 & 2 P1	109
380-95026-4 MS	HALAWA WELLS UNITS 1 & 2 P1	117
380-95026-4 MSD	HALAWA WELLS UNITS 1 & 2 P1	116

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water — **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) BFB1 (38-134)
380-95026-5	TB MOANALUA WELLS	104
380-95026-6	TB AIEA GULCH WELLS PUMP 2	111
380-95026-7	TB AIEA WELLS PUMPS 1&2 (260) P2	111
380-95026-8	TB HALAWA WELLS UNITS 1 & 2 P1	111
LCS 570-441358/4	Lab Control Sample	121
LCSD 570-441358/5	Lab Control Sample Dup	119
MB 570-441358/6	Method Blank	114
MRL 570-441358/3	Lab Control Sample	112

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Drinking Water — **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) OTCSN1 (60-130)
380-95026-1	MOANALUA WELLS	103
380-95026-2	AIEA GULCH WELLS PUMP 2	102
380-95026-3	AIEA WELLS PUMPS 1&2 (260) P2	101
380-95026-4	HALAWA WELLS UNITS 1 & 2 P1	97

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Surrogate Summary

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

Job ID: 380-95026-1
SDG: 625, 8015

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 570-440703/2-A	Lab Control Sample	115								
LCSD 570-440703/3-A	Lab Control Sample Dup	95								
MB 570-440703/1-A	Method Blank	99								

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Acenapht (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)				
117782-B1	Method Blank	95	97	113	86	102				
117782-BS1	Lab Control Sample	92	99	115	85	93				
117782-BS2	Lab Control Sample Dup	91	99	119	83	96				

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Acenapht (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)				
380-95026-1	MOANALUA WELLS	74	81	97	69	84				
380-95026-2	AIEA GULCH WELLS PUMP 2	98	100	107	86	107				
380-95026-3	AIEA WELLS PUMPS 1&2 (260) P2	88	93	104	79	93				
380-95026-4	HALAWA WELLS UNITS 1 & 2 P1	97	102	111	86	102				

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

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

Lab Sample ID: MB 570-441358/6
Matrix: Water
Analysis Batch: 441358

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			05/16/24 16:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*38 - 134*		*05/16/24 16:34*	*1*

Lab Sample ID: LCS 570-441358/4
Matrix: Water
Analysis Batch: 441358

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)			400	414		ug/L		103	78 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*121*		*38 - 134*

Lab Sample ID: LCSD 570-441358/5
Matrix: Water
Analysis Batch: 441358

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)			400	410		ug/L		103	78 - 120	1	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*119*		*38 - 134*

Lab Sample ID: MRL 570-441358/3
Matrix: Water
Analysis Batch: 441358

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	13.6		ug/L		136	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*38 - 134*

Lab Sample ID: 380-95026-4 MS
Matrix: Drinking Water
Analysis Batch: 441358

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
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		400	397		ug/L		99	68 - 122		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*38 - 134*

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

Lab Sample ID: 380-95026-4 MSD
Matrix: Drinking Water
Analysis Batch: 441358

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
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		400	395		ug/L		99	68 - 122	1	18

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*38 - 134*

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

Lab Sample ID: MB 570-440703/1-A
Matrix: Water
Analysis Batch: 444687

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440703

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25		ug/L		05/14/24 22:42	05/27/24 20:26	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		05/14/24 22:42	05/27/24 20:26	1
C8-C18	<25		25		ug/L		05/14/24 22:42	05/27/24 20:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*99*		*60 - 130*	*05/14/24 22:42*	*05/27/24 20:26*	*1*

Lab Sample ID: LCS 570-440703/2-A
Matrix: Water
Analysis Batch: 444687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 440703

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			1600	1640		ug/L		103	56 - 127		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*115*		*60 - 130*

Lab Sample ID: LCSD 570-440703/3-A
Matrix: Water
Analysis Batch: 444687

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 440703

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			1600	1340		ug/L		84	56 - 127	20	23

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*95*		*60 - 130*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Lab Sample ID: 117782-B1
Matrix: BlankMatrix
Analysis Batch: O-45058

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-45058_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 117782-B1
Matrix: BlankMatrix
Analysis Batch: O-45058

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-45058_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Acenaphthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Biphenyl	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Chrysene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/10/24 00:00	06/09/24 03:08	1
Fluoranthene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Fluorene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Naphthalene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Perylene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Phenanthrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1
Pyrene	ND		0.005	0.001	µg/L		05/10/24 00:00	06/09/24 03:08	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*95*		*27 - 133*	*05/10/24 00:00*	*06/09/24 03:08*	*1*
(d10-Phenanthrene)	*97*		*43 - 129*	*05/10/24 00:00*	*06/09/24 03:08*	*1*
(d12-Chrysene)	*113*		*52 - 144*	*05/10/24 00:00*	*06/09/24 03:08*	*1*
(d12-Perylene)	*102*		*36 - 161*	*05/10/24 00:00*	*06/09/24 03:08*	*1*
(d8-Naphthalene)	*86*		*25 - 125*	*05/10/24 00:00*	*06/09/24 03:08*	*1*

Lab Sample ID: 117782-BS1
Matrix: BlankMatrix
Analysis Batch: O-45058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-45058_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.458		µg/L		92	31 - 128
1-Methylphenanthrene	0.5	0.523		µg/L		105	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.491		µg/L		98	55 - 122
2,6-Dimethylnaphthalene	0.5	0.463		µg/L		93	48 - 120
2-Methylnaphthalene	0.5	0.444		µg/L		89	47 - 130
Acenaphthene	0.5	0.472		µg/L		94	53 - 131
Acenaphthylene	0.5	0.486		µg/L		97	43 - 140
Anthracene	0.5	0.489		µg/L		98	58 - 135
Benz[a]anthracene	0.5	0.552		µg/L		110	55 - 145

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 117782-BS1
Matrix: BlankMatrix
Analysis Batch: O-45058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-45058_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzo[a]pyrene			0.5	0.449		µg/L		90	51 - 143		
Benzo[b]fluoranthene			0.5	0.556		µg/L		111	46 - 165		
Benzo[e]pyrene			0.5	0.513		µg/L		103	42 - 152		
Benzo[g,h,i]perylene			0.5	0.502		µg/L		100	63 - 133		
Benzo[k]fluoranthene			0.5	0.525		µg/L		105	56 - 145		
Biphenyl			0.5	0.468		µg/L		94	56 - 119		
Chrysene			0.5	0.51		µg/L		102	56 - 141		
Dibenz[a,h]anthracene			0.5	0.543		µg/L		109	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.309		µg/L		62	50 - 150		
Dibenzothiophene			0.5	0.51		µg/L		102	46 - 126		
Disalicylidenepropanediamine			50	48.1		µg/L		96	50 - 150		
Fluoranthene			0.5	0.493		µg/L		99	60 - 146		
Fluorene			0.5	0.493		µg/L		99	58 - 131		
Indeno[1,2,3-cd]pyrene			0.5	0.547		µg/L		109	50 - 151		
Naphthalene			0.5	0.437		µg/L		87	41 - 126		
Perylene			0.5	0.492		µg/L		98	48 - 141		
Phenanthrene			0.5	0.501		µg/L		100	67 - 127		
Pyrene			0.5	0.434		µg/L		87	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*92*		*27 - 133*
(d10-Phenanthrene)	*99*		*43 - 129*
(d12-Chrysene)	*115*		*52 - 144*
(d12-Perylene)	*93*		*36 - 161*
(d8-Naphthalene)	*85*		*25 - 125*

Lab Sample ID: 117782-BS2
Matrix: BlankMatrix
Analysis Batch: O-45058

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45058_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.428		µg/L		86	31 - 128	7	30
1-Methylphenanthrene			0.5	0.577		µg/L		115	66 - 127	9	30
2,3,5-Trimethylnaphthalene			0.5	0.494		µg/L		99	55 - 122	1	30
2,6-Dimethylnaphthalene			0.5	0.464		µg/L		93	48 - 120	0	30
2-Methylnaphthalene			0.5	0.449		µg/L		90	47 - 130	1	30
Acenaphthene			0.5	0.472		µg/L		94	53 - 131	0	30
Acenaphthylene			0.5	0.485		µg/L		97	43 - 140	0	30
Anthracene			0.5	0.525		µg/L		105	58 - 135	7	30
Benz[a]anthracene			0.5	0.567		µg/L		113	55 - 145	3	30
Benzo[a]pyrene			0.5	0.458		µg/L		92	51 - 143	2	30
Benzo[b]fluoranthene			0.5	0.551		µg/L		110	46 - 165	1	30
Benzo[e]pyrene			0.5	0.508		µg/L		102	42 - 152	1	30
Benzo[g,h,i]perylene			0.5	0.516		µg/L		103	63 - 133	3	30
Benzo[k]fluoranthene			0.5	0.528		µg/L		106	56 - 145	1	30
Biphenyl			0.5	0.475		µg/L		95	56 - 119	1	30
Chrysene			0.5	0.501		µg/L		100	56 - 141	2	30
Dibenz[a,h]anthracene			0.5	0.587		µg/L		117	55 - 150	7	30

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 117782-BS2
Matrix: BlankMatrix
Analysis Batch: O-45058

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45058_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dibenzo[a,l]pyrene			0.5	0.27		µg/L		54	50 - 150	14	30
Dibenzothiophene			0.5	0.516		µg/L		103	46 - 126	1	30
Disalicylidenepropanediamine			50	49.2		µg/L		98	50 - 150	2	30
Fluoranthene			0.5	0.544		µg/L		109	60 - 146	10	30
Fluorene			0.5	0.519		µg/L		104	58 - 131	5	30
Indeno[1,2,3-cd]pyrene			0.5	0.563		µg/L		113	50 - 151	4	30
Naphthalene			0.5	0.435		µg/L		87	41 - 126	0	30
Perylene			0.5	0.501		µg/L		100	48 - 141	2	30
Phenanthrene			0.5	0.509		µg/L		102	67 - 127	2	30
Pyrene			0.5	0.513		µg/L		103	54 - 156	17	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*91*		*27 - 133*
(d10-Phenanthrene)	*99*		*43 - 129*
(d12-Chrysene)	*119*		*52 - 144*
(d12-Perylene)	*96*		*36 - 161*
(d8-Naphthalene)	*83*		*25 - 125*

GC VOA

Analysis Batch: 441358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95026-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	
380-95026-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B GRO LL	
380-95026-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B GRO LL	
380-95026-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	
380-95026-5	TB MOANALUA WELLS	Total/NA	Water	8015B GRO LL	
380-95026-6	TB AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015B GRO LL	
380-95026-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	8015B GRO LL	
380-95026-8	TB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	8015B GRO LL	
MB 570-441358/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-441358/4	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-441358/5	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-441358/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-95026-4 MS	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	
380-95026-4 MSD	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	

GC Semi VOA

Prep Batch: 440703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95026-1	MOANALUA WELLS	Total/NA	Drinking Water	3510C	
380-95026-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	3510C	
380-95026-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	3510C	
380-95026-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	3510C	
MB 570-440703/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-440703/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-440703/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 444687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95026-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B	440703
380-95026-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B	440703
380-95026-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B	440703
380-95026-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B	440703
MB 570-440703/1-A	Method Blank	Total/NA	Water	8015B	440703
LCS 570-440703/2-A	Lab Control Sample	Total/NA	Water	8015B	440703
LCSD 570-440703/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	440703

Subcontract

Analysis Batch: O-45058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95026-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45058_P
380-95026-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45058_P
380-95026-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45058_P
380-95026-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45058_P
117782-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45058_P
117782-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45058_P

Subcontract (Continued)

Analysis Batch: O-45058 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
117782-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45058_P

Prep Batch: O-45058_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95026-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
380-95026-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
380-95026-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	EPA_625	
380-95026-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	EPA_625	
117782-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
117782-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
117782-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-95026-1
SDG: 625, 8015

Client Sample ID: MOANALUA WELLS
Date Collected: 05/07/24 09:34
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95026-1
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	441358	A9VE	EET CAL 4	05/16/24 19:21
Total/NA	Prep	3510C			440703	TR8L	EET CAL 4	05/14/24 22:42
Total/NA	Analysis	8015B		1	444687	SP9M	EET CAL 4	05/27/24 22:32
Total/NA	Prep	EPA_625		1	O-45058_P			05/10/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45058	YC		06/09/24 08:32

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 05/07/24 10:30
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95026-2
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	441358	A9VE	EET CAL 4	05/16/24 19:47
Total/NA	Prep	3510C			440703	TR8L	EET CAL 4	05/14/24 22:42
Total/NA	Analysis	8015B		1	444687	SP9M	EET CAL 4	05/27/24 22:53
Total/NA	Prep	EPA_625		1	O-45058_P			05/10/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45058	YC		06/09/24 10:21

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/07/24 11:07
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95026-3
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	441358	A9VE	EET CAL 4	05/16/24 20:13
Total/NA	Prep	3510C			440703	TR8L	EET CAL 4	05/14/24 22:42
Total/NA	Analysis	8015B		1	444687	SP9M	EET CAL 4	05/27/24 23:14
Total/NA	Prep	EPA_625		1	O-45058_P			05/10/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45058	YC		06/09/24 12:10

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/07/24 10:01
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95026-4
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	441358	A9VE	EET CAL 4	05/16/24 20:40
Total/NA	Prep	3510C			440703	TR8L	EET CAL 4	05/14/24 22:42
Total/NA	Analysis	8015B		1	444687	SP9M	EET CAL 4	05/27/24 23:34
Total/NA	Prep	EPA_625		1	O-45058_P			05/10/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45058	YC		06/09/24 13:59

Lab Chronicle

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

Job ID: 380-95026-1
SDG: 625, 8015

Client Sample ID: TB MOANALUA WELLS
Lab Sample ID: 380-95026-5
Date Collected: 05/07/24 09:34
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	441358	A9VE	EET CAL 4	05/16/24 17:37

Client Sample ID: TB AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-95026-6
Date Collected: 05/07/24 10:30
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	441358	A9VE	EET CAL 4	05/16/24 18:03

Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-95026-7
Date Collected: 05/07/24 11:07
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	441358	A9VE	EET CAL 4	05/16/24 18:29

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-95026-8
Date Collected: 05/07/24 10:01
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	441358	A9VE	EET CAL 4	05/16/24 18:55

Laboratory References:

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

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: 380-95026-1
SDG: 625, 8015

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	06-11-24
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: 380-95026-1
SDG: 625, 8015

Method	Method Description	Protocol	Laboratory
8015B GRO LL	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	EET CAL 4
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

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

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: 380-95026-1
SDG: 625, 8015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-95026-1	MOANALUA WELLS	Drinking Water	05/07/24 09:34	05/09/24 10:44	HI0000331
380-95026-2	AIEA GULCH WELLS PUMP 2	Drinking Water	05/07/24 10:30	05/09/24 10:44	HI0000331
380-95026-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	05/07/24 11:07	05/09/24 10:44	HI0000331
380-95026-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	05/07/24 10:01	05/09/24 10:44	HI0000331
380-95026-5	TB MOANALUA WELLS	Water	05/07/24 09:34	05/09/24 10:44	
380-95026-6	TB AIEA GULCH WELLS PUMP 2	Water	05/07/24 10:30	05/09/24 10:44	
380-95026-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Water	05/07/24 11:07	05/09/24 10:44	
380-95026-8	TB HALAWA WELLS UNITS 1 & 2 P1	Water	05/07/24 10:01	05/09/24 10:44	

June 18, 2024

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

Project Name: RED HILL Project # 38001111 Job # 380-95026-1
Physis Project ID: 1407003-509

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 5/10/2024. 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
Rachel Hansen
714 602-5320
Extension 203
rachelhansen@physislabs.com

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-509

RED HILL Project # 38001111 Job # 380-95026-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
117783	MOANALUA WELLS	380-95026-1	5/7/2024	9:34	Samplewater	Not Specified
117784	AIEA GULCH WELLS PUMP 2	380-95026-2	5/7/2024	10:30	Samplewater	Not Specified
117785	IEA GULCH WELLS PUMPS 1&2 (26(	380-95026-3	5/7/2024	11:07	Samplewater	Not Specified
117786	HALAWA WELLS UNITS 1 & 2 P1	380-95026-4	5/7/2024	10:01	Samplewater	Not Specified

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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

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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 MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) 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.

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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.

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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

PHYSIS Project ID: 1407003-509
Client: Eurofins Eaton Analytical
Project: RED HILL Project # 38001111 Job # 380-95026-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117783-R1	**MOANALUA WELLS 380-95026-1**		**Matrix: Samplewater**				**Sampled: 07-May-24 9:34**			**Received:**	**10-May-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45058	10-May-24	09-Jun-24
Sample ID: 117784-R1	**AIEA GULCH WELLS PUMP 2 380-9**		**Matrix: Samplewater**				**Sampled: 07-May-24 10:30**			**Received:**	**10-May-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45058	10-May-24	09-Jun-24
Sample ID: 117785-R1	**AIEA GULCH WELLS PUMPS 1&2 (2**		**Matrix: Samplewater**				**Sampled: 07-May-24 11:07**			**Received:**	**10-May-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45058	10-May-24	09-Jun-24
Sample ID: 117786-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**		**Matrix: Samplewater**				**Sampled: 07-May-24 10:01**			**Received:**	**10-May-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45058	10-May-24	09-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117783-R1	**MOANALUA WELLS 380-95026-1**	**Matrix: Samplewater**					**Sampled: 07-May-24 9:34**			**Received: 10-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	74	1			Total		O-45058	10-May-24	09-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	81	1			Total		O-45058	10-May-24	09-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	97	1			Total		O-45058	10-May-24	09-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	84	1			Total		O-45058	10-May-24	09-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	69	1			Total		O-45058	10-May-24	09-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24

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-45058	10-May-24	09-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117784-R1	**AIEA GULCH WELLS PUMP 2 380-9**	**Matrix: Samplewater**					**Sampled: 07-May-24 10:30**			**Received:**	**10-May-24**
(d10-Acenaphthene)	EPA 625.1	% Recovery	98	1			Total		O-45058	10-May-24	09-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	100	1			Total		O-45058	10-May-24	09-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	107	1			Total		O-45058	10-May-24	09-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	107	1			Total		O-45058	10-May-24	09-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	86	1			Total		O-45058	10-May-24	09-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24

PHYSIS Project ID: 1407003-509
Client: Eurofins Eaton Analytical
Project: RED HILL Project # 38001111 Job # 380-95026-1

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-45058	10-May-24	09-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117785-R1	**AIEA GULCH WELLS PUMPS 1&2 (2**	**Matrix: Samplewater**					**Sampled: 07-May-24 11:07**			**Received: 10-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	88	1			Total		O-45058	10-May-24	09-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	93	1			Total		O-45058	10-May-24	09-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	104	1			Total		O-45058	10-May-24	09-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	93	1			Total		O-45058	10-May-24	09-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	79	1			Total		O-45058	10-May-24	09-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24

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-45058	10-May-24	09-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 117786-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**	**Matrix: Samplewater**					**Sampled: 07-May-24 10:01**			**Received:**	**10-May-24**
(d10-Acenaphthene)	EPA 625.1	% Recovery	97	1			Total		O-45058	10-May-24	09-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	102	1			Total		O-45058	10-May-24	09-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	111	1			Total		O-45058	10-May-24	09-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	102	1			Total		O-45058	10-May-24	09-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	86	1			Total		O-45058	10-May-24	09-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24

PHYSIS Project ID: 1407003-509
Client: Eurofins Eaton Analytical
Project: RED HILL Project # 38001111 Job # 380-95026-1

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-45058	10-May-24	09-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45058	10-May-24	09-Jun-24

QUALITY CONTROL REPORT

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 117782-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**						**Received:**	
		Method: EPA 625.1				Batch ID: O-45058			Prepared: 10-May-24				Analyzed: 09-Jun-24	
Disalicylidenepropanediamine	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 117782-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**						**Received:**	
		Method: EPA 625.1				Batch ID: O-45058			Prepared: 10-May-24				Analyzed: 09-Jun-24	
Disalicylidenepropanediamine	Total	48.1	1	0.05	0.1	µg/L	50	0	96	50 - 150%	PASS			
Sample ID: 117782-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**						**Received:**	
		Method: EPA 625.1				Batch ID: O-45058			Prepared: 10-May-24				Analyzed: 09-Jun-24	
Disalicylidenepropanediamine	Total	49.2	1	0.05	0.1	µg/L	50	0	98	50 - 150%	PASS	2	30 PASS	

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 117782-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**					**Received:**	
	Method: EPA 625.1					Batch ID: O-45058		Prepared: 10-May-24				Analyzed: 09-Jun-24	
(d10-Acenaphthene)	Total	95	1			% Recovery	100	95	27 - 133%	PASS			
(d10-Phenanthrene)	Total	97	1			% Recovery	100	97	43 - 129%	PASS			
(d12-Chrysene)	Total	113	1			% Recovery	100	113	52 - 144%	PASS			
(d12-Perylene)	Total	102	1			% Recovery	100	102	36 - 161%	PASS			
(d8-Naphthalene)	Total	86	1			% Recovery	100	86	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							

PHYSIS Project ID: 1407003-509
Client: Eurofins Eaton Analytical
Project: RED HILL Project # 38001111 Job # 380-95026-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 117782-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
	Method: EPA 625.1					Batch ID: O-45058		Prepared: 10-May-24				Analyzed: 09-Jun-24	
(d10-Acenaphthene)	Total	92	1			% Recovery	100	0	92	27 - 133%	PASS		
(d10-Phenanthrene)	Total	99	1			% Recovery	100	0	99	43 - 129%	PASS		
(d12-Chrysene)	Total	115	1			% Recovery	100	0	115	52 - 144%	PASS		
(d12-Perylene)	Total	93	1			% Recovery	100	0	93	36 - 161%	PASS		
(d8-Naphthalene)	Total	85	1			% Recovery	100	0	85	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.523	1	0.001	0.005	µg/L	0.5	0	105	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.491	1	0.001	0.005	µg/L	0.5	0	98	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.463	1	0.001	0.005	µg/L	0.5	0	93	48 - 120%	PASS		
2-Methylnaphthalene	Total	0.444	1	0.001	0.005	µg/L	0.5	0	89	47 - 130%	PASS		
Acenaphthene	Total	0.472	1	0.001	0.005	µg/L	0.5	0	94	53 - 131%	PASS		
Acenaphthylene	Total	0.486	1	0.001	0.005	µg/L	0.5	0	97	43 - 140%	PASS		
Anthracene	Total	0.489	1	0.001	0.005	µg/L	0.5	0	98	58 - 135%	PASS		
Benz[a]anthracene	Total	0.552	1	0.001	0.005	µg/L	0.5	0	110	55 - 145%	PASS		
Benzo[a]pyrene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	0.556	1	0.001	0.005	µg/L	0.5	0	111	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	0.525	1	0.001	0.005	µg/L	0.5	0	105	56 - 145%	PASS		
Biphenyl	Total	0.468	1	0.001	0.005	µg/L	0.5	0	94	56 - 119%	PASS		
Chrysene	Total	0.51	1	0.001	0.005	µg/L	0.5	0	102	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	0.543	1	0.001	0.005	µg/L	0.5	0	109	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.309	1	0.001	0.005	µg/L	0.5	0	62	50 - 150%	PASS		

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Dibenzothiophene	Total	0.51	1	0.001	0.005	µg/L	0.5	0	102	46 - 126%	PASS			
Fluoranthene	Total	0.493	1	0.001	0.005	µg/L	0.5	0	99	60 - 146%	PASS			
Fluorene	Total	0.493	1	0.001	0.005	µg/L	0.5	0	99	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.547	1	0.001	0.005	µg/L	0.5	0	109	50 - 151%	PASS			
Naphthalene	Total	0.437	1	0.001	0.005	µg/L	0.5	0	87	41 - 126%	PASS			
Perylene	Total	0.492	1	0.001	0.005	µg/L	0.5	0	98	48 - 141%	PASS			
Phenanthrene	Total	0.501	1	0.001	0.005	µg/L	0.5	0	100	67 - 127%	PASS			
Pyrene	Total	0.434	1	0.001	0.005	µg/L	0.5	0	87	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 117782-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**		
	Method: EPA 625.1					Batch ID: O-45058		Prepared: 10-May-24				Analyzed: 09-Jun-24		
(d10-Acenaphthene)	Total	91	1			% Recovery	100	0	91	27 - 133%	PASS	1	30	PASS
(d10-Phenanthrene)	Total	99	1			% Recovery	100	0	99	43 - 129%	PASS	0	30	PASS
(d12-Chrysene)	Total	119	1			% Recovery	100	0	119	52 - 144%	PASS	3	30	PASS
(d12-Perylene)	Total	96	1			% Recovery	100	0	96	36 - 161%	PASS	3	30	PASS
(d8-Naphthalene)	Total	83	1			% Recovery	100	0	83	25 - 125%	PASS	2	30	PASS
1-Methylnaphthalene	Total	0.428	1	0.001	0.005	µg/L	0.5	0	86	31 - 128%	PASS	7	30	PASS
1-Methylphenanthrene	Total	0.577	1	0.001	0.005	µg/L	0.5	0	115	66 - 127%	PASS	9	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.494	1	0.001	0.005	µg/L	0.5	0	99	55 - 122%	PASS	1	30	PASS
2,6-Dimethylnaphthalene	Total	0.464	1	0.001	0.005	µg/L	0.5	0	93	48 - 120%	PASS	0	30	PASS
2-Methylnaphthalene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	47 - 130%	PASS	1	30	PASS
Acenaphthene	Total	0.472	1	0.001	0.005	µg/L	0.5	0	94	53 - 131%	PASS	0	30	PASS
Acenaphthylene	Total	0.485	1	0.001	0.005	µg/L	0.5	0	97	43 - 140%	PASS	0	30	PASS
Anthracene	Total	0.525	1	0.001	0.005	µg/L	0.5	0	105	58 - 135%	PASS	7	30	PASS
Benz[a]anthracene	Total	0.567	1	0.001	0.005	µg/L	0.5	0	113	55 - 145%	PASS	3	30	PASS
Benzo[a]pyrene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	51 - 143%	PASS	2	30	PASS
Benzo[b]fluoranthene	Total	0.551	1	0.001	0.005	µg/L	0.5	0	110	46 - 165%	PASS	1	30	PASS
Benzo[e]pyrene	Total	0.508	1	0.001	0.005	µg/L	0.5	0	102	42 - 152%	PASS	1	30	PASS
Benzo[g,h,i]perylene	Total	0.516	1	0.001	0.005	µg/L	0.5	0	103	63 - 133%	PASS	3	30	PASS
Benzo[k]fluoranthene	Total	0.528	1	0.001	0.005	µg/L	0.5	0	106	56 - 145%	PASS	1	30	PASS
Biphenyl	Total	0.475	1	0.001	0.005	µg/L	0.5	0	95	56 - 119%	PASS	1	30	PASS
Chrysene	Total	0.501	1	0.001	0.005	µg/L	0.5	0	100	56 - 141%	PASS	2	30	PASS
Dibenz[a,h]anthracene	Total	0.587	1	0.001	0.005	µg/L	0.5	0	117	55 - 150%	PASS	7	30	PASS
Dibenzo[a,l]pyrene	Total	0.27	1	0.001	0.005	µg/L	0.5	0	54	50 - 150%	PASS	14	30	PASS

PHYSIS Project ID: 1407003-509
Client: Eurofins Eaton Analytical
Project: RED HILL Project # 38001111 Job # 380-95026-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Dibenzothiophene	Total	0.516	1	0.001	0.005	µg/L	0.5	0	103	46 - 126%	PASS	1	30	PASS	
Fluoranthene	Total	0.544	1	0.001	0.005	µg/L	0.5	0	109	60 - 146%	PASS	10	30	PASS	
Fluorene	Total	0.519	1	0.001	0.005	µg/L	0.5	0	104	58 - 131%	PASS	5	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.563	1	0.001	0.005	µg/L	0.5	0	113	50 - 151%	PASS	4	30	PASS	
Naphthalene	Total	0.435	1	0.001	0.005	µg/L	0.5	0	87	41 - 126%	PASS	0	30	PASS	
Perylene	Total	0.501	1	0.001	0.005	µg/L	0.5	0	100	48 - 141%	PASS	2	30	PASS	
Phenanthrene	Total	0.509	1	0.001	0.005	µg/L	0.5	0	102	67 - 127%	PASS	2	30	PASS	
Pyrene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	54 - 156%	PASS	17	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 117783

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3174	3.0239	1111	Anthracene-D10-	1517-22-2	95
65.8022	2.1635	795	Heptacosane	593-49-7	96
55.2671	1.3039	479	Benzyl butyl phthalate	85-68-7	96
56.7901	1.2213	449	Tetracosane	646-31-1	98
73.9020	0.6074	223	Octacosane	630-02-4	93
10.2609	0.4703	173	Hydroperoxide, 1-ethylbutyl	24254-56-6	82
10.6170	0.4207	155	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	88
10.4215	0.4134	152	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	91
53.5474	0.3327	122	Heneicosane	629-94-7	96

Concentration estimated using the response for Anthracene-d10

Sample ID: 117784

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.9049	2.8831	1111	Anthracene-D10-	1719-06-8	97
55.2810	0.9144	352	Benzyl butyl phthalate	85-68-7	96
10.2615	0.5199	200	Hydroperoxide, 1-ethylbutyl	24254-56-6	82
10.4220	0.4214	162	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	91
62.9206	0.3677	142	Heneicosane	629-94-7	94
11.4751	0.3109	120	1-Hexanol, 2-ethyl-	104-76-7	98

Concentration estimated using the response for Anthracene-d10

Sample ID: 117785

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.9033	2.9127	1111	Anthracene-D10-	1517-22-2	96
80.4735	1.7163	655	4(1H)-Pyridinone, 1,2,6-trimethyl-3,5-diphenyl-	42215-29-2	67
80.4732	1.7108	653	Bis(ethoxycarbonyl)-5,5-dimethoxycarbonyl--N-methylisoxazolidine, 3,4-cis	71167-58-3	59
29.4281	1.4759	563	1,2-Ethanediol	107-21-1	46
62.9169	1.4235	543	Heptacosane	593-49-7	93
55.2738	1.0799	412	Benzyl butyl phthalate	85-68-7	95
71.1540	0.8598	328	Benzaldehyde, 4-(5-phenyl-2-oxazolyl)-, oxime	1000262-81-2	42
34.9073	0.7242	276	Sulfapyridine	144-83-2	51
71.3079	0.6989	267	Heneicosane	629-94-7	89
10.2625	0.6827	260	Hydroperoxide, 1-ethylbutyl	24254-56-6	84
71.3083	0.6803	260	Octacosane	630-02-4	90
80.4836	0.6309	241	3,6-Dibromoquinoline	69268-39-9	45
80.4827	0.5826	222	(4-Bromo-2-phenyl-1-benzofuran-6-yl)amine	1010460-29-6	45
65.8144	0.5515	210	1H-Tetrazol-5-amine	4418-61-5	62
29.4242	0.5262	201	2-Aminopent-4-enoic acid, N-(but-2-yn-1-yloxycarbonyl)-, but-2-yn-1-yl ester	1000393-19-8	48
17.7121	0.5218	199	Oxalic acid, 2TMS derivative	18294-04-7	58
35.3216	0.4555	174	2H-Pyrido[1,2-a]pyrimidin-2-one, 4-methyl-	35549-22-5	43
10.6183	0.4476	171	3,3-Diethoxy-1-propyne	10160-87-9	89
62.9208	0.4149	158	Furan, tetrahydro-2-methyl-	96-47-9	77
80.4654	0.3961	151	Valine, N-methyl-N-methoxycarbonyl-, octyl ester	1000328-93-6	47
23.5458	0.3844	147	1H-Pyrrole, 2-methyl-	636-41-9	66
29.4231	0.3577	136	Methanamine, N-methyl-N-nitro-	4164-28-7	41
17.7122	0.3468	132	3,3-Dichloropropyne	25523-14-2	53
32.0499	0.3389	129	Benzoic acid, 2-ethylhexyl ester	5444-75-7	96
10.4227	0.3370	129	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	88
10.4227	0.3287	125	1-Methyl-4-(1-methylethyl)-cyclohexane	99-82-1	88
58.9352	0.3221	123	Glutarimide, N-(2-phenylpropyl)-	1000360-83-4	43
58.9353	0.3157	120	2-(5-Phenyl-1H-1,2,4-triazol-3-yl)phenol	65483-94-5	43
10.9650	0.3120	119	1-Butene, 2,3,3-trimethyl-	594-56-9	90
10.9647	0.3108	119	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	91
35.3391	0.3102	118	1,3-Dioxolane, 2,2'-(1,2-ethanediyl)bis[2-methyl-	944-26-3	52

Concentration estimated using the response for Anthracene-d10

Sample ID: 117786

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3240	3.0779	1111	Anthracene-D10-	1517-22-2	94
55.2748	1.1551	417	Benzyl butyl phthalate	85-68-7	94
62.9187	1.0168	367	Hexacosane	630-01-3	96
65.8154	0.8785	317	Octacosane	630-02-4	95
59.9136	0.8000	289	Pentacosane	629-99-2	95
59.9136	0.7512	271	Hexadecane, 2,6,10,14-tetramethyl-	638-36-8	92
68.6033	0.6859	248	Heneicosane	629-94-7	95
10.6159	0.6271	226	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	88
11.4642	0.4750	171	1-Hexanol, 2-ethyl-	104-76-7	99
56.7952	0.4455	161	Tetracosane	646-31-1	93
32.0469	0.3875	140	Benzoic acid, 2-ethylhexyl ester	5444-75-7	97
10.2605	0.3834	138	Hydroperoxide, 1-ethylbutyl	24254-56-6	81
27.5998	0.3541	128	2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	6846-50-0	97
10.4212	0.3324	120	Ethanone, 1-(1-methylcyclohexyl)-	2890-62-2	89

Concentration estimated using the response for Anthracene-d10

Sample ID: B1_45048

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3200	3.1366	1111	Anthracene-D10-	1517-22-2	94
10.2610	0.7026	249	Hydroperoxide, 1-ethylbutyl	24254-56-6	84
10.6178	0.4761	169	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	88

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-124404.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-95026-1
Address: 1904 Wright Circle, ,	Due Date Requested: 5/29/2024			
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MOANALUA WELLS (380-95026-1)	5/7/24	09:34 Hawaiian		Water			X	2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (380-95026-2)	5/7/24	10:30 Hawaiian		Water			X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) P2 (380-95026-3)	5/7/24	11:07 Hawaiian		Water			X	2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 P1 (380-95026-4)	5/7/24	10:01 Hawaiian		Water			X	2	See Attached Instructions

Preservation Codes: -

Other:

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.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ 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:	Date/Time:	Company	Received by:	Date/Time:	Company
1	X	5/10/24 1110	GEA	Sierra Whitacre	5/10/24 1110	Physis
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

6/18/2024

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Sample Receipt Summary

Project Iteration ID: 1407003-509
Client Name: Eurofins Eaton Analytical
Project Name: RED HILL Project # 38001111
Job # 380-95026-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Receiving Info

1. Initials Received By: SW
2. Date Received: 5/10/24
3. Time Received: 11:10
4. Client Name: Eurofins
5. Courier Information: (Please circle)
   - (Client) • UPS • Area Fast • DRS
   - FedEx • GSO/GLS • Ontrac • PAMS
   - PHYSIS Driver:
     i. Start Time: _____ iii. Total Mileage: _____
     ii. End Time: _____ 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): -1.9°C Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: CR

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

eurofins

Client Information	Sampler: bailey	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27984-2757 2
Client Contact: Dr Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: City & County of Honolulu	PWSID:	Analysis Requested		Job #:
Address: 630 South Beretania Street, Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8 C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note
			Preservation Code				R	A	Q		Y	N		
MOANALUA WELLS	05-07-2024	0934	G	Water			2	4	2	2				chlorinated
AIEA GULCH WELLS PUMP2	05-07-2024	1030	G	Water			2	4	2	2				chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	05-07-2024	1107	G	Water			2	4	2	2				
HALAWA WELLS UNITS 1&2 P1	05-07-2024	1001	G	Water			2	4	2	2				
TB MOANALUA WELLS	05-07-2024	0934		Water				2						
TB AIEA GULCH WELLS PUMP2	05-07-2024	1030		Water				2						
TB AIEA WELLS PUMPS 1&2 (260)	05-07-2024	1107		Water				2						
TB HALAWA WELLS UNITS 1&2	05-07-2024	1001		Water				2						

380-95026 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements

① 7762 9821 9848

Empty Kit Relinquished by | Date | Time | Method of Shipment: FED EX ② 7762 9821 9859

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
bailey	08may2024 1400	HBWS	G.REITNER	05/09/2024 10:44	EEAP
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: (751A) ① 3.6°-0.1°=3.5° ② 4.9°-0.1°=4.8° BEL-FROZEN

Ver: 01/16/2019

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

Chain of Custody Record

eurofins | Environment Testing

Loc: 380
95026

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-124387.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.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 #: 380-95026-1
Address: 2841 Dow Avenue, Suite 100, ,	Due Date Requested: 5/30/2024			Preservation Codes:
City: Tustin	TAT Requested (days):			
State, Zip: CA, 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			Other:

Analysis Requested

380-95026 Chain of Custody

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO_LL_CS/3510C_LL HNL Ranges: C10-C24/C24-C36/C8-C18	8015B_GRO_LL/5030C (MOD) GRO	8015B_GRO_LL/5030C GRO	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MOANALUA WELLS (380-95026-1)	5/7/24	09:34 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA GULCH WELLS PUMP 2 (380-95026-2)	5/7/24	10:30 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA WELLS PUMPS 1&2 (260) P2 (380-95026-3)	5/7/24	11:07 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
HALAWA WELLS UNITS 1 & 2 P1 (380-95026-4)	5/7/24	10:01 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
TB MOANALUA WELLS (380-95026-5)	5/7/24	09:34 Hawaiian		Water					X	2	MRLs are needed.
TB AIEA GULCH WELLS PUMP 2 (380-95026-6)	5/7/24	10:30 Hawaiian		Water					X	2	MRLs are needed.
TB AIEA WELLS PUMPS 1&2 (260) P2 (380-95026-7)	5/7/24	11:07 Hawaiian		Water					X	2	MRLs are needed.
TB HALAWA WELLS UNITS 1 & 2 P1 (380-95026-8)	5/7/24	10:01 Hawaiian		Water					X	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.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *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:	Date/Time:	Company	Received by:	Date/Time:	Company
	5/10/24 0953		Omar	5/10/24 - 8:50	DCS
Relinquished by: Omar	Date/Time: 5/10/24 9180	Company DCS	Received by:	Date/Time: 5/10/24 0950	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: 1.9 | 2.0 SM4

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-95026-1
SDG Number: 625, 8015

Login Number: 95026
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: 380-95026-1
SDG Number: 625, 8015

Login Number: 95026
List Number: 2
Creator: Khana, Piyush

List Source: Eurofins Calscience
List Creation: 05/10/24 04:39 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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	2.0
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/21/2024 10:43:35 AM

JOB DESCRIPTION

RED-HILL
525.2, 533, 537.1

JOB NUMBER

380-95033-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

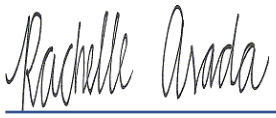
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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
T	Result is a tentatively identified compound (TIC) and an estimated value.

LCMS

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

Glossary

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

Job ID: 380-95033-1 — Eurofins Eaton Analytical Pomona

Job Narrative
380-95033-1

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 5/9/2024 10:44 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 3.5°C and 4.8°C.

Receipt Exceptions
Ice formation exists in one of the received 533 samples from site AIEA WELLS PUMPS 1&2 (260) P2 (380-95033-3).

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

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

Detection Summary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-95033-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-95033-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95033-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95033-4

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)	2.4		2.0		ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.2		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.0		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: FB MOANALUA WELLS — Lab Sample ID: 380-95033-5

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-95033-6

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95033-7

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95033-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MOANALUA WELLS

Date Collected: 05/07/24 09:34
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-1

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
2,4'-DDD	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
2,4'-DDE	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
2,4'-DDT	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
2-Methylnaphthalene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
4,4'-DDD	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
4,4'-DDE	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
4,4'-DDT	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Acenaphthene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Acenaphthylene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Acetochlor	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Alachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
alpha-BHC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
alpha-Chlordane	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Anthracene	<0.019	F1	0.019		ug/L		05/15/24 10:00	05/20/24 15:58	1
Atrazine	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Benz(a)anthracene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Benzo[a]pyrene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 15:58	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 15:58	1
Benzo[g,h,i]perylene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 15:58	1
beta-BHC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		05/15/24 10:00	05/20/24 15:58	1
Bromacil	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Butachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Butylbenzylphthalate	<0.48		0.48		ug/L		05/15/24 10:00	05/20/24 15:58	1
Chlorobenzilate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Chloroneb	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Chlorpyrifos	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Chrysene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 15:58	1
delta-BHC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		05/15/24 10:00	05/20/24 15:58	1
Dibenz(a,h)anthracene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Diclorvos (DDVP)	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Dieldrin	<0.19		0.19		ug/L		05/15/24 10:00	05/20/24 15:58	1
Diethylphthalate	<0.48		0.48		ug/L		05/15/24 10:00	05/20/24 15:58	1
Dimethylphthalate	<0.48		0.48		ug/L		05/15/24 10:00	05/20/24 15:58	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		05/15/24 10:00	05/20/24 15:58	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Endosulfan sulfate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Endrin	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Endrin aldehyde	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
EPTC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Fluoranthene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 05/07/24 09:34
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
gamma-Chlordane	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Heptachlor	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 15:58	1
Heptachlor epoxide (isomer B)	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Hexachlorobenzene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Hexachlorocyclopentadiene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Isophorone	<0.48		0.48		ug/L		05/15/24 10:00	05/20/24 15:58	1
Lindane	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 15:58	1
Malathion	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Methoxychlor	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Metolachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Molinate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Naphthalene	<0.29		0.29		ug/L		05/15/24 10:00	05/20/24 15:58	1
Parathion	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Phenanthrene	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 15:58	1
Propachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Pyrene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Simazine	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Terbacil	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Terbuthylazine	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1
Thiobencarb	<0.19		0.19		ug/L		05/15/24 10:00	05/20/24 15:58	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		05/15/24 10:00	05/20/24 15:58	1
trans-Nonachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 15:58	1
Trifluralin	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 15:58	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/15/24 10:00*	*05/20/24 15:58*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*101*		*70 - 130*	*05/15/24 10:00*	*05/20/24 15:58*	*1*
Perylene-d12	*90*		*70 - 130*	*05/15/24 10:00*	*05/20/24 15:58*	*1*
Triphenylphosphate	*80*		*70 - 130*	*05/15/24 10:00*	*05/20/24 15:58*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 05/07/24 09:34
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*75*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C6 PFDA	*85*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C5 PFHxA	*81*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C4 PFHpA	*78*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C8 PFOA	*81*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C9 PFNA	*82*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C7 PFUnA	*88*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C2 PFDoA	*88*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C4 PFBA	*85*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C5 PFPeA	*80*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C3 PFBS	*98*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C3 PFHxS	*98*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C8 PFOS	*101*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C2-4:2-FTS	*123*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C2-6:2-FTS	*115*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*1*
13C2-8:2-FTS	*99*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:01*	*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		05/10/24 11:08	05/11/24 13:59	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-95033-1
Date Collected: 05/07/24 09:34
Matrix: Water
Date Received: 05/09/24 10:44

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*106*		*70 - 130*	*05/10/24 11:08*	*05/11/24 13:59*	*1*
13C2 PFHxA	*106*		*70 - 130*	*05/10/24 11:08*	*05/11/24 13:59*	*1*
13C2 PFDA	*99*		*70 - 130*	*05/10/24 11:08*	*05/11/24 13:59*	*1*
13C3-GenX	*89*		*70 - 130*	*05/10/24 11:08*	*05/11/24 13:59*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-95033-2
Date Collected: 05/07/24 10:30
Matrix: Water
Date Received: 05/09/24 10:44

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
2,4'-DDD	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
2,4'-DDE	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
2,4'-DDT	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
2-Methylnaphthalene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
4,4'-DDD	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
4,4'-DDE	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
4,4'-DDT	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Acenaphthene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Acenaphthylene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Acetochlor	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Alachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
alpha-BHC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
alpha-Chlordane	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Anthracene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:18	1
Atrazine	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Benz(a)anthracene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Benzo[a]pyrene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:18	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:18	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 05/07/24 10:30
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:18	1
beta-BHC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		05/15/24 10:00	05/20/24 16:18	1
Bromacil	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Butachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Butylbenzylphthalate	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 16:18	1
Chlorobenzilate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Chloroneb	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Chlorpyrifos	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Chrysene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:18	1
delta-BHC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		05/15/24 10:00	05/20/24 16:18	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Dieldrin	<0.19		0.19		ug/L		05/15/24 10:00	05/20/24 16:18	1
Diethylphthalate	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 16:18	1
Dimethylphthalate	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 16:18	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		05/15/24 10:00	05/20/24 16:18	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Endosulfan sulfate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Endrin	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Endrin aldehyde	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
EPTC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Fluoranthene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Fluorene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
gamma-Chlordane	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Heptachlor	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 16:18	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Hexachlorobenzene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Isophorone	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 16:18	1
Lindane	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 16:18	1
Malathion	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Methoxychlor	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Metolachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Molinate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Naphthalene	<0.29		0.29		ug/L		05/15/24 10:00	05/20/24 16:18	1
Parathion	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Phenanthrene	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 16:18	1
Propachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Pyrene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Simazine	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Terbacil	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1
Terbuthylazine	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 05/07/24 10:30
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.19		0.19		ug/L		05/15/24 10:00	05/20/24 16:18	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		05/15/24 10:00	05/20/24 16:18	1
trans-Nonachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:18	1
Trifluralin	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/15/24 10:00*	*05/20/24 16:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*102*		*70 - 130*	*05/15/24 10:00*	*05/20/24 16:18*	*1*
Perylene-d12	*93*		*70 - 130*	*05/15/24 10:00*	*05/20/24 16:18*	*1*
Triphenylphosphate	*95*		*70 - 130*	*05/15/24 10:00*	*05/20/24 16:18*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:11	1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 05/07/24 10:30
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-2
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	78		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C6 PFDA	86		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C5 PFHxA	81		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C4 PFHpA	82		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C8 PFOA	87		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C9 PFNA	84		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C7 PFUnA	88		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C2 PFDoA	86		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C4 PFBA	85		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C5 PFPeA	80		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C3 PFBS	93		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C3 PFHxS	96		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C8 PFOS	97		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C2-4:2-FTS	120		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C2-6:2-FTS	104		50 - 200	05/10/24 06:18	05/10/24 21:11	1
13C2-8:2-FTS	103		50 - 200	05/10/24 06:18	05/10/24 21:11	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		05/10/24 11:08	05/11/24 15:14	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	112		70 - 130	05/10/24 11:08	05/11/24 15:14	1
13C2 PFHxA	105		70 - 130	05/10/24 11:08	05/11/24 15:14	1
13C2 PFDA	102		70 - 130	05/10/24 11:08	05/11/24 15:14	1
13C3-GenX	101		70 - 130	05/10/24 11:08	05/11/24 15:14	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/07/24 11:07
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
2,4'-DDD	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
2,4'-DDE	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
2,4'-DDT	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
2-Methylnaphthalene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
4,4'-DDD	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
4,4'-DDE	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
4,4'-DDT	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Acenaphthene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Acenaphthylene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Acetochlor	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Alachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
alpha-BHC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
alpha-Chlordane	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Anthracene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:38	1
Atrazine	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Benz(a)anthracene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Benzo[a]pyrene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:38	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:38	1
Benzo[g,h,i]perylene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:38	1
beta-BHC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		05/15/24 10:00	05/20/24 16:38	1
Bromacil	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Butachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Butylbenzylphthalate	<0.48		0.48		ug/L		05/15/24 10:00	05/20/24 16:38	1
Chlorobenzilate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Chloroneb	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Chlorpyrifos	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Chrysene	<0.019		0.019		ug/L		05/15/24 10:00	05/20/24 16:38	1
delta-BHC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		05/15/24 10:00	05/20/24 16:38	1
Dibenz(a,h)anthracene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Diclorvos (DDVP)	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Dieldrin	<0.19		0.19		ug/L		05/15/24 10:00	05/20/24 16:38	1
Diethylphthalate	<0.48		0.48		ug/L		05/15/24 10:00	05/20/24 16:38	1
Dimethylphthalate	<0.48		0.48		ug/L		05/15/24 10:00	05/20/24 16:38	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		05/15/24 10:00	05/20/24 16:38	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Endosulfan sulfate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Endrin	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Endrin aldehyde	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
EPTC	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Fluoranthene	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/07/24 11:07
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
gamma-Chlordane	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Heptachlor	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 16:38	1
Heptachlor epoxide (isomer B)	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Hexachlorobenzene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Hexachlorocyclopentadiene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Isophorone	<0.48		0.48		ug/L		05/15/24 10:00	05/20/24 16:38	1
Lindane	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 16:38	1
Malathion	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Methoxychlor	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Metolachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Molinate	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Naphthalene	<0.29		0.29		ug/L		05/15/24 10:00	05/20/24 16:38	1
Parathion	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Phenanthrene	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 16:38	1
Propachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Pyrene	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Simazine	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Terbacil	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Terbuthylazine	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1
Thiobencarb	<0.19		0.19		ug/L		05/15/24 10:00	05/20/24 16:38	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		05/15/24 10:00	05/20/24 16:38	1
trans-Nonachlor	<0.048		0.048		ug/L		05/15/24 10:00	05/20/24 16:38	1
Trifluralin	<0.097		0.097		ug/L		05/15/24 10:00	05/20/24 16:38	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/15/24 10:00*	*05/20/24 16:38*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*101*		*70 - 130*	*05/15/24 10:00*	*05/20/24 16:38*	*1*
Perylene-d12	*94*		*70 - 130*	*05/15/24 10:00*	*05/20/24 16:38*	*1*
Triphenylphosphate	*93*		*70 - 130*	*05/15/24 10:00*	*05/20/24 16:38*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/07/24 11:07
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*72*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C6 PFDA	*76*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C5 PFHxA	*78*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C4 PFHpA	*76*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C8 PFOA	*78*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C9 PFNA	*76*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C7 PFUnA	*81*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C2 PFDoA	*79*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C4 PFBA	*88*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C5 PFPeA	*84*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C3 PFBS	*90*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C3 PFHxS	*95*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C8 PFOS	*97*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C2-4:2-FTS	*112*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C2-6:2-FTS	*108*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*1*
13C2-8:2-FTS	*102*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:22*	*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		05/10/24 11:08	05/11/24 15:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1

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

Lab Sample ID: 380-95033-3

Date Collected: 05/07/24 11:07
Matrix: Water
Date Received: 05/09/24 10:44

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*110*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:25*	*1*
13C2 PFHxA	*102*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:25*	*1*
13C2 PFDA	*101*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:25*	*1*
13C3-GenX	*92*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:25*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-95033-4

Date Collected: 05/07/24 10:01
Matrix: Water
Date Received: 05/09/24 10:44

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		05/15/24 10:00	05/20/24 16:59	1
2,4'-DDD	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
2,4'-DDE	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
2,4'-DDT	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
2-Methylnaphthalene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
4,4'-DDD	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
4,4'-DDE	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
4,4'-DDT	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Acenaphthene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Acenaphthylene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Acetochlor	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Alachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
alpha-BHC	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
alpha-Chlordane	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Anthracene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 16:59	1
Atrazine	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Benz(a)anthracene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Benzo[a]pyrene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 16:59	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 16:59	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/07/24 10:01
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-4
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 16:59	1
beta-BHC	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		05/15/24 10:00	05/20/24 16:59	1
Bromacil	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Butachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Butylbenzylphthalate	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 16:59	1
Chlorobenzilate	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Chloroneb	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Chlorpyrifos	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Chrysene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 16:59	1
delta-BHC	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		05/15/24 10:00	05/20/24 16:59	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Dieldrin	<0.20		0.20		ug/L		05/15/24 10:00	05/20/24 16:59	1
Diethylphthalate	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 16:59	1
Dimethylphthalate	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 16:59	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		05/15/24 10:00	05/20/24 16:59	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Endosulfan sulfate	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Endrin	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Endrin aldehyde	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
EPTC	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Fluoranthene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Fluorene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
gamma-Chlordane	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Heptachlor	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 16:59	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Hexachlorobenzene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Isophorone	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 16:59	1
Lindane	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 16:59	1
Malathion	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Methoxychlor	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Metolachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Molinate	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Naphthalene	<0.29		0.29		ug/L		05/15/24 10:00	05/20/24 16:59	1
Parathion	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Phenanthrene	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 16:59	1
Propachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Pyrene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Simazine	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Terbacil	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1
Terbuthylazine	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/07/24 10:01
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-4
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.20		0.20		ug/L		05/15/24 10:00	05/20/24 16:59	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		05/15/24 10:00	05/20/24 16:59	1
trans-Nonachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 16:59	1
Trifluralin	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 16:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/15/24 10:00*	*05/20/24 16:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*104*		*70 - 130*	*05/15/24 10:00*	*05/20/24 16:59*	*1*
Perylene-d12	*94*		*70 - 130*	*05/15/24 10:00*	*05/20/24 16:59*	*1*
Triphenylphosphate	*98*		*70 - 130*	*05/15/24 10:00*	*05/20/24 16:59*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluorohexanesulfonic acid (PFHxS)	**2.4**		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluorooctanesulfonic acid (PFOS)	**2.4**		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluoropentanoic acid (PFPeA)	**2.2**		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 05/07/24 10:01
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-4

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*82*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C6 PFDA	*79*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C5 PFHxA	*83*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C4 PFHpA	*83*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C8 PFOA	*81*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C9 PFNA	*79*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C7 PFUnA	*77*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C2 PFDoA	*75*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C4 PFBA	*91*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C5 PFPeA	*87*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C3 PFBS	*97*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C3 PFHxS	*100*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C8 PFOS	*95*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C2-4:2-FTS	*120*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C2-6:2-FTS	*110*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*1*
13C2-8:2-FTS	*99*		*50 - 200*	*05/10/24 06:18*	*05/10/24 21:43*	*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		05/10/24 11:08	05/11/24 15:36	1
Perfluorooctanesulfonic acid (PFOS)	**2.0**		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluorohexanesulfonic acid (PFHxS)	**2.3**		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*108*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:36*	*1*
13C2 PFHxA	*96*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:36*	*1*

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-95033-4
Matrix: Water
Date Collected: 05/07/24 10:01
Date Received: 05/09/24 10:44

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	95		70 - 130	05/10/24 11:08	05/11/24 15:36	1
13C3-GenX	90		70 - 130	05/10/24 11:08	05/11/24 15:36	1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-95033-5
Matrix: Water
Date Collected: 05/07/24 09:34
Date Received: 05/09/24 10:44

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/10/24 06:18	05/10/24 21:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C6 PFDA	93		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C5 PFHxA	92		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C4 PFHpA	93		50 - 200	05/10/24 06:18	05/10/24 21:54	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB MOANALUA WELLS
Date Collected: 05/07/24 09:34
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-5
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	95		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C9 PFNA	92		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C7 PFUnA	93		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C2 PFDoA	90		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C4 PFBA	93		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C5 PFPeA	91		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C3 PFBS	98		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C3 PFHxS	100		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C8 PFOS	99		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C2-4:2-FTS	118		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C2-6:2-FTS	110		50 - 200	05/10/24 06:18	05/10/24 21:54	1
13C2-8:2-FTS	100		50 - 200	05/10/24 06:18	05/10/24 21:54	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		05/10/24 11:08	05/11/24 15:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 15:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130	05/10/24 11:08	05/11/24 15:46	1
13C2 PFHxA	96		70 - 130	05/10/24 11:08	05/11/24 15:46	1
13C2 PFDA	99		70 - 130	05/10/24 11:08	05/11/24 15:46	1
13C3-GenX	86		70 - 130	05/10/24 11:08	05/11/24 15:46	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Date Collected: 05/07/24 10:30
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-6

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*79*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C6 PFDA	*85*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C5 PFHxA	*83*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C4 PFHpA	*83*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C8 PFOA	*87*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C9 PFNA	*85*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C7 PFUnA	*84*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C2 PFDoA	*79*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C4 PFBA	*92*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C5 PFPeA	*92*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C3 PFBS	*91*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C3 PFHxS	*91*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C8 PFOS	*91*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-95033-6
Matrix: Water
Date Collected: 05/07/24 10:30
Date Received: 05/09/24 10:44

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	*110*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C2-6:2-FTS	*111*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*1*
13C2-8:2-FTS	*103*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:41*	*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		05/10/24 11:08	05/11/24 15:57	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/10/24 11:08	05/11/24 15:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*111*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:57*	*1*
13C2 PFHxA	*98*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:57*	*1*
13C2 PFDA	*100*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:57*	*1*
13C3-GenX	*92*		*70 - 130*	*05/10/24 11:08*	*05/11/24 15:57*	*1*

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

Lab Sample ID: 380-95033-7
Matrix: Water
Date Collected: 05/07/24 11:07
Date Received: 05/09/24 10:44

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/10/24 13:10	05/11/24 19:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/10/24 13:10	05/11/24 19:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/10/24 13:10	05/11/24 19:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/10/24 13:10	05/11/24 19:52	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/07/24 11:07
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-7
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 19:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*79*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C6 PFDA	*92*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C5 PFHxA	*85*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C4 PFHpA	*87*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C8 PFOA	*89*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C9 PFNA	*88*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C7 PFUnA	*86*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C2 PFDoA	*88*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C4 PFBA	*91*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C5 PFPeA	*88*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C3 PFBS	*91*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C3 PFHxS	*94*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C8 PFOS	*92*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C2-4:2-FTS	*119*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C2-6:2-FTS	*110*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*1*
13C2-8:2-FTS	*103*		*50 - 200*	*05/10/24 13:10*	*05/11/24 19:52*	*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		05/10/24 11:08	05/11/24 16:18	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1

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

Lab Sample ID: 380-95033-7

Date Collected: 05/07/24 11:07
Matrix: Water
Date Received: 05/09/24 10:44

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*108*		*70 - 130*	*05/10/24 11:08*	*05/11/24 16:18*	*1*
13C2 PFHxA	*92*		*70 - 130*	*05/10/24 11:08*	*05/11/24 16:18*	*1*
13C2 PFDA	*101*		*70 - 130*	*05/10/24 11:08*	*05/11/24 16:18*	*1*
13C3-GenX	*87*		*70 - 130*	*05/10/24 11:08*	*05/11/24 16:18*	*1*

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

Lab Sample ID: 380-95033-8

Date Collected: 05/07/24 10:01
Matrix: Water
Date Received: 05/09/24 10:44

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/07/24 10:01
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-8
Matrix: Water

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		05/10/24 13:10	05/11/24 20:03	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/10/24 13:10	05/11/24 20:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*90*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C6 PFDA	*94*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C5 PFHxA	*97*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C4 PFHpA	*98*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C8 PFOA	*99*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C9 PFNA	*94*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C7 PFUnA	*96*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C2 PFDoA	*95*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C4 PFBA	*98*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C5 PFPeA	*91*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C3 PFBS	*90*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C3 PFHxS	*97*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C8 PFOS	*95*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C2-4:2-FTS	*119*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C2-6:2-FTS	*107*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*1*
13C2-8:2-FTS	*104*		*50 - 200*	*05/10/24 13:10*	*05/11/24 20:03*	*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		05/10/24 11:08	05/11/24 16:29	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/07/24 10:01
Date Received: 05/09/24 10:44

Lab Sample ID: 380-95033-8
Matrix: Water

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		05/10/24 11:08	05/11/24 16:29	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/10/24 11:08	05/11/24 16:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*114*		*70 - 130*	*05/10/24 11:08*	*05/11/24 16:29*	*1*
13C2 PFHxA	*101*		*70 - 130*	*05/10/24 11:08*	*05/11/24 16:29*	*1*
13C2 PFDA	*103*		*70 - 130*	*05/10/24 11:08*	*05/11/24 16:29*	*1*
13C3-GenX	*93*		*70 - 130*	*05/10/24 11:08*	*05/11/24 16:29*	*1*

Action Limit Summary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-95033-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.048		ug/L	0.2	0.048	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048		ug/L	50	0.048	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-95033-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2 (Continued) — Lab Sample ID: 380-95033-2

Compliance Check

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

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

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95033-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.048		ug/L	0.2	0.048	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048		ug/L	50	0.048	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95033-4

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	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	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.4		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB MOANALUA WELLS — Lab Sample ID: 380-95033-5

Compliance Check

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

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

Action Limit Summary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-95033-6

Compliance Check

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

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

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-95033-7

Compliance Check

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

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

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-95033-8

Compliance Check

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

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

Action Limit Summary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-95033-8

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Surrogate Summary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-95033-1	MOANALUA WELLS	101	90	80
380-95033-1 MS	MOANALUA WELLS	102	90	87
380-95033-2	AIEA GULCH WELLS PUMP 2	102	93	95
380-95033-2 DU	AIEA GULCH WELLS PUMP 2	102	93	82
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	101	94	93
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	104	94	98
LCS 380-90684/23-A	Lab Control Sample	100	92	95
MB 380-90684/21-A	Method Blank	104	95	94
MRL 380-90684/22-A	Lab Control Sample	102	98	95

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-95033-1	MOANALUA WELLS	106	106	99	89
380-95033-1 MS	MOANALUA WELLS	109	101	97	92
380-95033-1 MSD	MOANALUA WELLS	108	105	99	95
380-95033-2	AIEA GULCH WELLS PUMP 2	112	105	102	101
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	110	102	101	92
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	108	96	95	90
380-95033-5	FB MOANALUA WELLS	107	96	99	86
380-95033-6	FB AIEA GULCH WELLS PUMP 2	111	98	100	92
380-95033-7	FB AIEA WELLS PUMPS 1&2 (260) P2	108	92	101	87
380-95033-8	FB HALAWA WELLS UNITS 1 & 2 P1	114	101	103	93
LCS 380-89994/23-A	Lab Control Sample	108	104	108	95
MBL 380-89994/21-A	Method Blank	99	101	108	93
MRL 380-89994/22-A	Lab Control Sample	106	100	106	92

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: 380-95033-1
SDG: 525.2, 533, 537.1

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	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-95033-1	MOANALUA WELLS	75	85	81	78	81	82	88	88
380-95033-2	AIEA GULCH WELLS PUMP 2	78	86	81	82	87	84	88	86
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	72	76	78	76	78	76	81	79
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	82	79	83	83	81	79	77	75
380-95033-5	FB MOANALUA WELLS	87	93	92	93	95	92	93	90
380-95033-6	FB AIEA GULCH WELLS PUMP 2	79	85	83	83	87	85	84	79
380-95033-7	FB AIEA WELLS PUMPS 1&2 (260) P2	79	92	85	87	89	88	86	88
380-95033-8	FB HALAWA WELLS UNITS 1 & 2 P1	90	94	97	98	99	94	96	95
380-95051-B-3-A MS	Matrix Spike	81	70	85	83	77	70	73	74
380-95051-B-3-B MSD	Matrix Spike Duplicate	119	95	119	116	110	98	93	89
380-95139-B-2-A MS	Matrix Spike	82	82	84	82	82	79	83	79
380-95139-C-2-A MSD	Matrix Spike Duplicate	87	87	88	89	86	85	90	87
LCS 380-89926/22-A	Lab Control Sample	96	97	96	97	98	95	99	93
LCS 380-90006/22-A	Lab Control Sample	81	83	84	84	86	84	85	83
MBL 380-89926/20-A	Method Blank	96	96	100	97	103	96	100	97
MBL 380-90006/20-A	Method Blank	69	81	79	77	80	81	83	84
MRL 380-89926/21-A	Lab Control Sample	88	98	97	96	100	94	97	95
MRL 380-90006/21-A	Lab Control Sample	74	84	76	82	87	85	85	82

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-95033-1	MOANALUA WELLS	85	80	98	98	101	123	115	99
380-95033-2	AIEA GULCH WELLS PUMP 2	85	80	93	96	97	120	104	103
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	88	84	90	95	97	112	108	102
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	91	87	97	100	95	120	110	99
380-95033-5	FB MOANALUA WELLS	93	91	98	100	99	118	110	100
380-95033-6	FB AIEA GULCH WELLS PUMP 2	92	92	91	91	91	110	111	103
380-95033-7	FB AIEA WELLS PUMPS 1&2 (260) P2	91	88	91	94	92	119	110	103
380-95033-8	FB HALAWA WELLS UNITS 1 & 2 P1	98	91	90	97	95	119	107	104
380-95051-B-3-A MS	Matrix Spike	89	92	91	97	94	121	113	101
380-95051-B-3-B MSD	Matrix Spike Duplicate	128	143	127	128	115	182	160	123
380-95139-B-2-A MS	Matrix Spike	87	97	99	97	95	121	119	109
380-95139-C-2-A MSD	Matrix Spike Duplicate	95	101	101	101	98	127	119	105
LCS 380-89926/22-A	Lab Control Sample	95	95	99	99	100	121	114	107
LCS 380-90006/22-A	Lab Control Sample	87	84	94	98	95	118	118	104
MBL 380-89926/20-A	Method Blank	101	96	101	103	100	127	120	108
MBL 380-90006/20-A	Method Blank	82	78	92	94	93	116	110	103
MRL 380-89926/21-A	Lab Control Sample	94	96	99	102	98	118	118	105
MRL 380-90006/21-A	Lab Control Sample	91	89	86	91	92	117	114	98

Surrogate Legend

HFPODA = 13C3 HFPO-DA

Isotope Dilution Summary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

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

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

Lab Sample ID: MB 380-90684/21-A
Matrix: Water
Analysis Batch: 91321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90684

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
2,4'-DDD	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
2,4'-DDE	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
2,4'-DDT	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
2-Methylnaphthalene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
4,4'-DDD	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
4,4'-DDE	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
4,4'-DDT	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Acenaphthene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Acenaphthylene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Acetochlor	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Alachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
alpha-BHC	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
alpha-Chlordane	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Anthracene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 15:38	1
Atrazine	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Benz(a)anthracene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Benzo[a]pyrene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 15:38	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 15:38	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 15:38	1
beta-BHC	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		05/15/24 10:00	05/20/24 15:38	1
Bromacil	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Butachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Butylbenzylphthalate	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 15:38	1
Chlorobenzilate	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Chloroneb	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Chlorpyrifos	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Chrysene	<0.020		0.020		ug/L		05/15/24 10:00	05/20/24 15:38	1
delta-BHC	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		05/15/24 10:00	05/20/24 15:38	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Dieldrin	<0.20		0.20		ug/L		05/15/24 10:00	05/20/24 15:38	1
Diethylphthalate	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 15:38	1
Dimethylphthalate	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 15:38	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		05/15/24 10:00	05/20/24 15:38	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Endosulfan sulfate	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Endrin	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Endrin aldehyde	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
EPTC	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1

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

Lab Sample ID: MB 380-90684/21-A
Matrix: Water
Analysis Batch: 91321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90684

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Fluorene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
gamma-Chlordane	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Heptachlor	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 15:38	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Hexachlorobenzene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Isophorone	<0.49		0.49		ug/L		05/15/24 10:00	05/20/24 15:38	1
Lindane	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 15:38	1
Malathion	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Methoxychlor	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Metolachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Molinate	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Naphthalene	<0.29		0.29		ug/L		05/15/24 10:00	05/20/24 15:38	1
Parathion	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Phenanthrene	<0.039		0.039		ug/L		05/15/24 10:00	05/20/24 15:38	1
Propachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Pyrene	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Simazine	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Terbacil	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Terbuthylazine	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1
Thiobencarb	<0.20		0.20		ug/L		05/15/24 10:00	05/20/24 15:38	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		05/15/24 10:00	05/20/24 15:38	1
trans-Nonachlor	<0.049		0.049		ug/L		05/15/24 10:00	05/20/24 15:38	1
Trifluralin	<0.098		0.098		ug/L		05/15/24 10:00	05/20/24 15:38	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.566*	*T J*	*ug/L*		*3.82*	*N/A*	*05/15/24 10:00*	*05/20/24 15:38*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*104*		*70 - 130*	*05/15/24 10:00*	*05/20/24 15:38*	*1*
Perylene-d12	*95*		*70 - 130*	*05/15/24 10:00*	*05/20/24 15:38*	*1*
Triphenylphosphate	*94*		*70 - 130*	*05/15/24 10:00*	*05/20/24 15:38*	*1*

Lab Sample ID: LCS 380-90684/23-A
Matrix: Water
Analysis Batch: 91321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90684

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			1.95	2.11		ug/L		108	70 - 130		
2,4'-DDD			1.95	2.16		ug/L		111	70 - 130		
2,4'-DDE			1.95	2.10		ug/L		107	70 - 130		
2,4'-DDT			1.95	1.95		ug/L		100	70 - 130		
2,4-Dinitrotoluene			1.95	1.75		ug/L		90	70 - 130		
2,6-Dinitrotoluene			1.95	1.98		ug/L		102	70 - 130		
2-Methylnaphthalene			1.95	2.12		ug/L		109	70 - 130		

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

Lab Sample ID: LCS 380-90684/23-A
Matrix: Water
Analysis Batch: 91321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90684

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	1.95	1.96		ug/L		101	70 - 130
4,4'-DDE	1.95	2.02		ug/L		104	70 - 130
4,4'-DDT	1.95	2.03		ug/L		104	70 - 130
Acenaphthene	1.95	2.02		ug/L		104	70 - 130
Acenaphthylene	1.95	1.99		ug/L		102	70 - 130
Acetochlor	1.95	1.86		ug/L		95	70 - 130
Alachlor	1.95	1.90		ug/L		98	70 - 130
alpha-BHC	1.95	2.00		ug/L		102	70 - 130
alpha-Chlordane	1.95	1.71		ug/L		88	70 - 130
Anthracene	1.95	1.75		ug/L		90	70 - 130
Atrazine	1.95	1.94		ug/L		99	70 - 130
Benz(a)anthracene	1.95	1.93		ug/L		99	70 - 130
Benzo[a]pyrene	1.95	1.78		ug/L		91	70 - 130
Benzo[b]fluoranthene	1.95	2.05		ug/L		105	70 - 130
Benzo[g,h,i]perylene	1.95	2.21		ug/L		113	70 - 130
Benzo[k]fluoranthene	1.95	2.04		ug/L		105	70 - 130
beta-BHC	1.95	1.91		ug/L		98	70 - 130
Bis(2-ethylhexyl) phthalate	1.95	2.37		ug/L		122	70 - 130
Bromacil	1.95	2.17		ug/L		111	70 - 130
Butachlor	1.95	2.18		ug/L		112	70 - 130
Butylbenzylphthalate	1.95	2.22		ug/L		114	70 - 130
Chlorobenzilate	1.95	2.36		ug/L		121	70 - 130
Chloroneb	1.95	2.00		ug/L		103	70 - 130
Chlorothalonil (Draconil, Bravo)	1.95	2.07		ug/L		106	70 - 130
Chlorpyrifos	1.95	1.85		ug/L		95	70 - 130
Chrysene	1.95	2.08		ug/L		107	70 - 130
delta-BHC	1.95	2.12		ug/L		109	70 - 130
Di(2-ethylhexyl)adipate	1.95	2.22		ug/L		114	70 - 130
Dibenz(a,h)anthracene	1.95	2.26		ug/L		116	70 - 130
Diclorvos (DDVP)	1.95	2.40		ug/L		123	70 - 130
Dieldrin	1.95	2.09		ug/L		107	70 - 130
Diethylphthalate	1.95	1.91		ug/L		98	70 - 130
Dimethylphthalate	1.95	2.14		ug/L		110	70 - 130
Di-n-butyl phthalate	3.90	4.43		ug/L		114	70 - 130
Di-n-octyl phthalate	1.95	2.10		ug/L		108	70 - 130
Endosulfan I (Alpha)	1.95	2.19		ug/L		113	70 - 130
Endosulfan II (Beta)	1.95	2.29		ug/L		118	70 - 130
Endosulfan sulfate	1.95	1.94		ug/L		99	70 - 130
Endrin	1.95	1.93		ug/L		99	70 - 130
Endrin aldehyde	1.95	1.92		ug/L		98	60 - 130
EPTC	1.95	2.25		ug/L		115	70 - 130
Fluoranthene	1.95	2.10		ug/L		108	70 - 130
Fluorene	1.95	2.12		ug/L		109	70 - 130
gamma-Chlordane	1.95	1.71		ug/L		88	70 - 130
Heptachlor	1.95	2.20		ug/L		113	70 - 130
Heptachlor epoxide (isomer B)	1.95	1.65		ug/L		85	70 - 130
Hexachlorobenzene	1.95	1.75		ug/L		90	70 - 130
Hexachlorocyclopentadiene	1.95	2.13		ug/L		109	70 - 130
Indeno[1,2,3-cd]pyrene	1.95	2.14		ug/L		110	70 - 130

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

Lab Sample ID: LCS 380-90684/23-A
Matrix: Water
Analysis Batch: 91321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90684

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Isophorone	1.95	2.09		ug/L		107	70 - 130
Lindane	1.95	1.99		ug/L		102	70 - 130
Malathion	1.95	2.00		ug/L		102	70 - 130
Methoxychlor	1.95	2.07		ug/L		106	70 - 130
Metolachlor	1.95	2.13		ug/L		109	70 - 130
Molinate	1.95	2.14		ug/L		110	70 - 130
Naphthalene	1.95	2.02		ug/L		104	70 - 130
Parathion	1.95	2.11		ug/L		108	70 - 130
Pendimethalin (Penoxaline)	1.95	1.94		ug/L		100	70 - 130
Phenanthrene	1.95	2.09		ug/L		107	70 - 130
Propachlor	1.95	1.95		ug/L		100	70 - 130
Pyrene	1.95	2.13		ug/L		109	70 - 130
Simazine	1.95	1.91		ug/L		98	70 - 130
Terbacil	1.95	1.93		ug/L		99	70 - 130
Terbuthylazine	1.95	1.75		ug/L		90	70 - 130
Thiobencarb	1.95	2.16		ug/L		110	70 - 130
trans-Nonachlor	1.95	1.77		ug/L		91	70 - 130
Trifluralin	1.95	1.83		ug/L		94	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Perylene-d12	*92*		*70 - 130*
Triphenylphosphate	*95*		*70 - 130*

Lab Sample ID: MRL 380-90684/22-A
Matrix: Water
Analysis Batch: 91321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90684

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0974	0.117		ug/L		120	50 - 150
2,4'-DDD	0.0974	0.110		ug/L		113	50 - 150
2,4'-DDE	0.0974	0.102		ug/L		104	50 - 150
2,4'-DDT	0.0974	0.102		ug/L		105	50 - 150
2,4-Dinitrotoluene	0.0974	0.0910	J	ug/L		93	50 - 150
2,6-Dinitrotoluene	0.0974	0.113		ug/L		116	50 - 150
2-Methylnaphthalene	0.0974	0.111		ug/L		114	50 - 150
4,4'-DDD	0.0974	0.109		ug/L		111	50 - 150
4,4'-DDE	0.0974	0.0857	J	ug/L		88	50 - 150
4,4'-DDT	0.0974	0.106		ug/L		109	50 - 150
Acenaphthene	0.0974	0.0980		ug/L		101	50 - 150
Acenaphthylene	0.0974	0.0998		ug/L		103	50 - 150
Acetochlor	0.0487	0.0534	J	ug/L		110	50 - 150
Alachlor	0.0487	0.0575		ug/L		118	50 - 150
alpha-BHC	0.0974	0.0964	J	ug/L		99	50 - 150
alpha-Chlordane	0.0243	<0.028		ug/L		104	50 - 150
Anthracene	0.0195	<0.019		ug/L		90	50 - 150
Atrazine	0.0487	<0.047		ug/L		89	50 - 150
Benz(a)anthracene	0.0487	0.0526		ug/L		108	50 - 150

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

Lab Sample ID: MRL 380-90684/22-A
Matrix: Water
Analysis Batch: 91321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90684

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[a]pyrene	0.0195	0.0206		ug/L		106	50 - 150
Benzo[b]fluoranthene	0.0195	0.0176	J	ug/L		90	50 - 150
Benzo[g,h,i]perylene	0.0487	0.0445	J	ug/L		91	50 - 150
Benzo[k]fluoranthene	0.0195	0.0176	J	ug/L		91	50 - 150
beta-BHC	0.0974	0.0917	J	ug/L		94	50 - 150
Bis(2-ethylhexyl) phthalate	0.584	0.682		ug/L		117	50 - 150
Bromacil	0.0974	0.117		ug/L		121	50 - 150
Butachlor	0.0487	0.0587		ug/L		121	50 - 150
Butylbenzylphthalate	0.146	0.153	J	ug/L		105	50 - 150
Chlorobenzilate	0.0974	0.104		ug/L		107	50 - 150
Chloroneb	0.0974	0.0957	J	ug/L		98	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0974	0.0962	J	ug/L		99	50 - 150
Chlorpyrifos	0.0487	0.0515		ug/L		106	50 - 150
Chrysene	0.0195	0.0209		ug/L		107	50 - 150
delta-BHC	0.0974	0.110		ug/L		113	50 - 150
Di(2-ethylhexyl)adipate	0.292	0.319	J	ug/L		109	50 - 150
Dibenz(a,h)anthracene	0.0487	0.0434	J	ug/L		89	50 - 150
Diclorvos (DDVP)	0.0487	0.0670		ug/L		138	50 - 150
Dieldrin	0.0974	0.109	J	ug/L		112	50 - 150
Diethylphthalate	0.146	0.164	J	ug/L		112	50 - 150
Dimethylphthalate	0.292	0.303	J	ug/L		104	50 - 150
Di-n-butyl phthalate	0.292	0.375	J	ug/L		128	49 - 243
Di-n-octyl phthalate	0.0974	0.0959	J	ug/L		98	50 - 150
Endosulfan I (Alpha)	0.0974	0.111		ug/L		114	50 - 150
Endosulfan II (Beta)	0.0974	0.0992		ug/L		102	50 - 150
Endosulfan sulfate	0.0974	0.119		ug/L		122	50 - 150
Endrin	0.0974	0.106		ug/L		109	50 - 150
Endrin aldehyde	0.0974	0.102		ug/L		105	50 - 150
EPTC	0.0974	0.102		ug/L		105	50 - 150
Fluoranthene	0.0487	0.0451	J	ug/L		93	50 - 150
Fluorene	0.0487	0.0495		ug/L		102	50 - 150
gamma-Chlordane	0.0243	0.0278	J	ug/L		114	50 - 150
Heptachlor	0.0389	0.0441		ug/L		113	50 - 150
Heptachlor epoxide (isomer B)	0.0487	0.0582		ug/L		120	50 - 150
Hexachlorobenzene	0.0487	0.0426	J	ug/L		87	50 - 150
Hexachlorocyclopentadiene	0.0487	0.0488	J	ug/L		100	50 - 150
Indeno[1,2,3-cd]pyrene	0.0487	0.0402	J	ug/L		83	50 - 150
Isophorone	0.0974	0.118	J	ug/L		121	50 - 150
Lindane	0.0389	0.0372	J	ug/L		96	50 - 150
Malathion	0.0974	0.110		ug/L		113	50 - 150
Methoxychlor	0.0974	0.106		ug/L		109	50 - 150
Metolachlor	0.0487	0.0640		ug/L		131	50 - 150
Molinate	0.0974	0.102		ug/L		105	50 - 150
Naphthalene	0.0974	0.113	J	ug/L		116	50 - 150
Parathion	0.0974	0.116		ug/L		119	50 - 150
Pendimethalin (Penoxaline)	0.0974	0.0846	J	ug/L		87	50 - 150
Phenanthrene	0.0195	0.0205	J	ug/L		105	50 - 150
Propachlor	0.0487	0.0442	J	ug/L		91	50 - 150
Pyrene	0.0487	0.0468	J	ug/L		96	50 - 150

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

Lab Sample ID: MRL 380-90684/22-A
Matrix: Water
Analysis Batch: 91321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90684

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Simazine	0.0487	0.0455	J	ug/L		93	50 - 150
Terbacil	0.0974	0.119		ug/L		122	50 - 150
Terbuthylazine	0.0974	0.0991		ug/L		102	50 - 150
Thiobencarb	0.0974	0.114	J	ug/L		117	50 - 150
trans-Nonachlor	0.0243	0.0326	J	ug/L		134	50 - 150
Trifluralin	0.0974	0.0968	J	ug/L		99	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*102*		*70 - 130*
Perylene-d12	*98*		*70 - 130*
Triphenylphosphate	*95*		*70 - 130*

Lab Sample ID: 380-95033-1 MS
Matrix: Water
Analysis Batch: 91321

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 90684

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.097		1.96	2.15		ug/L		109	70 - 130
2,4'-DDD	<0.097		1.96	2.05		ug/L		104	70 - 130
2,4'-DDE	<0.097		1.96	1.95		ug/L		99	70 - 130
2,4'-DDT	<0.097		1.96	1.80		ug/L		92	70 - 130
2,4-Dinitrotoluene	<0.097		1.96	1.74		ug/L		89	70 - 130
2,6-Dinitrotoluene	<0.097		1.96	1.97		ug/L		100	70 - 130
2-Methylnaphthalene	<0.097		1.96	2.15		ug/L		109	70 - 130
4,4'-DDD	<0.097		1.96	1.86		ug/L		95	70 - 130
4,4'-DDE	<0.097		1.96	1.84		ug/L		94	70 - 130
4,4'-DDT	<0.097		1.96	1.85		ug/L		94	70 - 130
Acenaphthene	<0.097		1.96	2.03		ug/L		104	70 - 130
Acenaphthylene	<0.097		1.96	2.04		ug/L		104	70 - 130
Acetochlor	<0.097		1.96	1.79		ug/L		91	70 - 130
Alachlor	<0.048		1.96	1.82		ug/L		93	70 - 130
alpha-BHC	<0.097		1.96	2.06		ug/L		105	70 - 130
alpha-Chlordane	<0.048		1.96	1.61		ug/L		82	70 - 130
Anthracene	<0.019	F1	1.96	1.17	F1	ug/L		60	70 - 130
Atrazine	<0.048		1.96	1.90		ug/L		96	70 - 130
Benz(a)anthracene	<0.048		1.96	1.75		ug/L		89	70 - 130
Benzo[a]pyrene	<0.019		1.96	1.70		ug/L		86	70 - 130
Benzo[b]fluoranthene	<0.019		1.96	2.07		ug/L		106	70 - 130
Benzo[g,h,i]perylene	<0.048		1.96	2.25		ug/L		115	70 - 130
Benzo[k]fluoranthene	<0.019		1.96	2.11		ug/L		107	70 - 130
beta-BHC	<0.097		1.96	2.00		ug/L		102	70 - 130
Bis(2-ethylhexyl) phthalate	<0.58		1.96	2.16		ug/L		110	70 - 130
Bromacil	<0.097		1.96	2.13		ug/L		108	70 - 130
Butachlor	<0.048		1.96	1.97		ug/L		100	70 - 130
Butylbenzylphthalate	<0.48		1.96	2.07		ug/L		105	70 - 130
Chlorobenzilate	<0.097		1.96	1.98		ug/L		101	70 - 130
Chloroneb	<0.097		1.96	2.03		ug/L		103	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.097		1.96	1.98		ug/L		101	70 - 130

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

Lab Sample ID: 380-95033-1 MS
Matrix: Water
Analysis Batch: 91321

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 90684

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorpyrifos	<0.048		1.96	1.81		ug/L		92	70 - 130
Chrysene	<0.019		1.96	2.12		ug/L		108	70 - 130
delta-BHC	<0.097		1.96	2.10		ug/L		107	70 - 130
Di(2-ethylhexyl)adipate	<0.58		1.96	1.94		ug/L		99	70 - 130
Dibenz(a,h)anthracene	<0.048		1.96	2.30		ug/L		117	70 - 130
Diclorvos (DDVP)	<0.048		1.96	2.37		ug/L		121	70 - 130
Dieldrin	<0.19		1.96	2.04		ug/L		102	70 - 130
Diethylphthalate	<0.48		1.96	1.94		ug/L		99	70 - 130
Dimethylphthalate	<0.48		1.96	2.18		ug/L		111	70 - 130
Di-n-butyl phthalate	<0.97		3.93	4.08		ug/L		104	70 - 130
Di-n-octyl phthalate	<0.097		1.96	1.94		ug/L		99	70 - 130
Endosulfan I (Alpha)	<0.097		1.96	2.10		ug/L		107	70 - 130
Endosulfan II (Beta)	<0.097		1.96	2.21		ug/L		113	70 - 130
Endosulfan sulfate	<0.097		1.96	1.86		ug/L		95	70 - 130
Endrin	<0.097		1.96	1.66		ug/L		85	70 - 130
Endrin aldehyde	<0.097		1.96	1.73		ug/L		88	60 - 130
EPTC	<0.097		1.96	2.22		ug/L		113	70 - 130
Fluoranthene	<0.097		1.96	2.08		ug/L		106	70 - 130
Fluorene	<0.048		1.96	2.13		ug/L		108	70 - 130
gamma-Chlordane	<0.048		1.96	1.67		ug/L		85	70 - 130
Heptachlor	<0.039		1.96	2.01		ug/L		102	70 - 130
Heptachlor epoxide (isomer B)	<0.048		1.96	1.68		ug/L		85	70 - 130
Hexachlorobenzene	<0.048		1.96	1.79		ug/L		91	70 - 130
Hexachlorocyclopentadiene	<0.048		1.96	2.04		ug/L		104	70 - 130
Indeno[1,2,3-cd]pyrene	<0.048		1.96	2.32		ug/L		118	70 - 130
Isophorone	<0.48		1.96	2.20		ug/L		112	70 - 130
Lindane	<0.039		1.96	2.08		ug/L		106	70 - 130
Malathion	<0.097		1.96	1.87		ug/L		95	70 - 130
Methoxychlor	<0.097		1.96	2.02		ug/L		103	70 - 130
Metolachlor	<0.048		1.96	1.97		ug/L		100	70 - 130
Molinate	<0.097		1.96	2.14		ug/L		109	70 - 130
Naphthalene	<0.29		1.96	2.08		ug/L		106	70 - 130
Parathion	<0.097		1.96	1.97		ug/L		100	70 - 130
Pendimethalin (Penoxaline)	<0.097		1.96	1.86		ug/L		95	70 - 130
Phenanthrene	<0.039		1.96	2.10		ug/L		107	70 - 130
Propachlor	<0.048		1.96	2.00		ug/L		102	70 - 130
Pyrene	<0.048		1.96	2.06		ug/L		105	70 - 130
Simazine	<0.048		1.96	1.82		ug/L		93	70 - 130
Terbacil	<0.097		1.96	1.78		ug/L		91	70 - 130
Terbuthylazine	<0.097		1.96	1.75		ug/L		89	70 - 130
Thiobencarb	<0.19		1.96	2.03		ug/L		103	70 - 130
trans-Nonachlor	<0.048		1.96	1.69		ug/L		86	70 - 130
Trifluralin	<0.097		1.96	1.84		ug/L		94	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*102*		*70 - 130*
Perylene-d12	*90*		*70 - 130*
Triphenylphosphate	*87*		*70 - 130*

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

Lab Sample ID: 380-95033-2 DU
Matrix: Water
Analysis Batch: 91321

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 90684

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.097		<0.097		ug/L		NC	20
2,4'-DDD	<0.097		<0.097		ug/L		NC	20
2,4'-DDE	<0.097		<0.097		ug/L		NC	20
2,4'-DDT	<0.097		<0.097		ug/L		NC	20
2,4-Dinitrotoluene	<0.097		<0.097		ug/L		NC	20
2,6-Dinitrotoluene	<0.097		<0.097		ug/L		NC	20
2-Methylnaphthalene	<0.097		<0.097		ug/L		NC	20
4,4'-DDD	<0.097		<0.097		ug/L		NC	20
4,4'-DDE	<0.097		<0.097		ug/L		NC	20
4,4'-DDT	<0.097		<0.097		ug/L		NC	20
Acenaphthene	<0.097		<0.097		ug/L		NC	20
Acenaphthylene	<0.097		<0.097		ug/L		NC	20
Acetochlor	<0.097		<0.097		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.097		<0.097		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.019		<0.019		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.019		<0.019		ug/L		NC	20
Benzo[b]fluoranthene	<0.019		<0.019		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.019		<0.019		ug/L		NC	20
beta-BHC	<0.097		<0.097		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.58		<0.58		ug/L		NC	20
Bromacil	<0.097		<0.097		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.097		<0.097		ug/L		NC	20
Chloroneb	<0.097		<0.097		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.097		<0.097		ug/L		NC	20
Chlorpyrifos	<0.049		<0.049		ug/L		NC	20
Chrysene	<0.019		<0.019		ug/L		NC	20
delta-BHC	<0.097		<0.097		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.58		<0.58		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049		<0.049		ug/L		NC	20
Dieldrin	<0.19		<0.19		ug/L		NC	20
Diethylphthalate	<0.49		<0.49		ug/L		NC	20
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20
Di-n-butyl phthalate	<0.97		<0.97		ug/L		NC	20
Di-n-octyl phthalate	<0.097		<0.097		ug/L		NC	20
Endosulfan I (Alpha)	<0.097		<0.097		ug/L		NC	20
Endosulfan II (Beta)	<0.097		<0.097		ug/L		NC	20
Endosulfan sulfate	<0.097		<0.097		ug/L		NC	20
Endrin	<0.097		<0.097		ug/L		NC	20
Endrin aldehyde	<0.097		<0.097		ug/L		NC	20
EPTC	<0.097		<0.097		ug/L		NC	20

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

Lab Sample ID: 380-95033-2 DU
Matrix: Water
Analysis Batch: 91321

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 90684

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Fluoranthene	<0.097			<0.097		ug/L				NC	20
Fluorene	<0.049			<0.049		ug/L				NC	20
gamma-Chlordane	<0.049			<0.049		ug/L				NC	20
Heptachlor	<0.039			<0.039		ug/L				NC	20
Heptachlor epoxide (isomer B)	<0.049			<0.049		ug/L				NC	20
Hexachlorobenzene	<0.049			<0.049		ug/L				NC	20
Hexachlorocyclopentadiene	<0.049			<0.049		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	<0.049			<0.049		ug/L				NC	20
Isophorone	<0.49			<0.49		ug/L				NC	20
Lindane	<0.039			<0.039		ug/L				NC	20
Malathion	<0.097			<0.097		ug/L				NC	20
Methoxychlor	<0.097			<0.097		ug/L				NC	20
Metolachlor	<0.049			<0.049		ug/L				NC	20
Molinate	<0.097			<0.097		ug/L				NC	20
Naphthalene	<0.29			<0.29		ug/L				NC	20
Parathion	<0.097			<0.097		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.097			<0.097		ug/L				NC	20
Phenanthrene	<0.039			<0.039		ug/L				NC	20
Propachlor	<0.049			<0.049		ug/L				NC	20
Pyrene	<0.049			<0.049		ug/L				NC	20
Simazine	<0.049			<0.049		ug/L				NC	20
Terbacil	<0.097			<0.097		ug/L				NC	20
Terbuthylazine	<0.097			<0.097		ug/L				NC	20
Thiobencarb	<0.19			<0.19		ug/L				NC	20
Total Permethrin (mixed isomers)	<0.19			<0.19		ug/L				NC	20
trans-Nonachlor	<0.049			<0.049		ug/L				NC	20
Trifluralin	<0.097			<0.097		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*102*		*70 - 130*
Perylene-d12	*93*		*70 - 130*
Triphenylphosphate	*82*		*70 - 130*

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

Lab Sample ID: MBL 380-89926/20-A
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 89926

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1

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

Lab Sample ID: MBL 380-89926/20-A
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 89926

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		05/10/24 06:18	05/10/24 18:52	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*96*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C6 PFDA	*96*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C5 PFHxA	*100*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C4 PFHpA	*97*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C8 PFOA	*103*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C9 PFNA	*96*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C7 PFUnA	*100*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C2 PFDoA	*97*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C4 PFBA	*101*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C5 PFPeA	*96*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C3 PFBS	*101*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C3 PFHxS	*103*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C8 PFOS	*100*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C2-4:2-FTS	*127*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C2-6:2-FTS	*120*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*
13C2-8:2-FTS	*108*		*50 - 200*	*05/10/24 06:18*	*05/10/24 18:52*	*1*

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

Lab Sample ID: LCS 380-89926/22-A
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89926

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	102		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	110		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	101		ng/L		84	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	104		ng/L		87	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	118		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	120	110		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	120	115		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	113		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	113		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	120	116		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	120	112		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	110		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	120	112		ng/L		93	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	110		ng/L		91	70 - 130
Perfluorobutanoic acid (PFBA)	120	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	112		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	121		ng/L		100	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	98.2		ng/L		82	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	113		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	110		ng/L		92	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	114		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	120	115		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	113		ng/L		94	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	116		ng/L		96	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*96*		*50 - 200*
13C6 PFDA	*97*		*50 - 200*
13C5 PFHxA	*96*		*50 - 200*
13C4 PFHpA	*97*		*50 - 200*
13C8 PFOA	*98*		*50 - 200*
13C9 PFNA	*95*		*50 - 200*

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

Lab Sample ID: LCS 380-89926/22-A
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89926

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C7 PFUnA	99		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	95		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	99		50 - 200
13C8 PFOS	100		50 - 200
13C2-4:2-FTS	121		50 - 200
13C2-6:2-FTS	114		50 - 200
13C2-8:2-FTS	107		50 - 200

Lab Sample ID: MRL 380-89926/21-A
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89926

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.68	J	ng/L		83	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.98	J	ng/L		98	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.83	J	ng/L		91	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.89	J	ng/L		94	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.06	J	ng/L		102	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.08	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.92	J	ng/L		95	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.14	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	1.98	J	ng/L		98	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.09	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.22	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.18	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.16	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.12	J	ng/L		105	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	1.71	J	ng/L		85	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.81	J	ng/L		90	50 - 150

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

Lab Sample ID: MRL 380-89926/21-A
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89926

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoro-3-methoxypropanoic acid (PFMPA)			2.01	1.95	J	ng/L		97	50 - 150		
Perfluoro-4-methoxybutanoic acid (PFMBA)			2.01	1.86	J	ng/L		92	50 - 150		
Perfluoropentanoic acid (PFPeA)			2.01	2.00	J	ng/L		99	50 - 150		
Perfluoroheptanesulfonic acid (PFHpS)			2.01	2.03	J	ng/L		101	50 - 150		
Perfluoropentanesulfonic acid (PFPeS)			2.01	1.84	J	ng/L		91	50 - 150		

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*88*		*50 - 200*
13C6 PFDA	*98*		*50 - 200*
13C5 PFHxA	*97*		*50 - 200*
13C4 PFHpA	*96*		*50 - 200*
13C8 PFOA	*100*		*50 - 200*
13C9 PFNA	*94*		*50 - 200*
13C7 PFUnA	*97*		*50 - 200*
13C2 PFDoA	*95*		*50 - 200*
13C4 PFBA	*94*		*50 - 200*
13C5 PFPeA	*96*		*50 - 200*
13C3 PFBS	*99*		*50 - 200*
13C3 PFHxS	*102*		*50 - 200*
13C8 PFOS	*98*		*50 - 200*
13C2-4:2-FTS	*118*		*50 - 200*
13C2-6:2-FTS	*118*		*50 - 200*
13C2-8:2-FTS	*105*		*50 - 200*

Lab Sample ID: 380-95139-B-2-A MS
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 89926

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	109		ng/L		90	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	117		ng/L		97	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	104		ng/L		86	70 - 130		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	113		ng/L		94	70 - 130		
Perfluorobutanesulfonic acid (PFBS)	4.4		121	118		ng/L		94	70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		121	114		ng/L		95	70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		121	116		ng/L		96	70 - 130		
Perfluoroheptanoic acid (PFHpA)	9.0		121	127		ng/L		98	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)	45		121	164		ng/L		99	70 - 130		
Perfluorohexanoic acid (PFHxA)	29		121	142		ng/L		93	70 - 130		

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

Lab Sample ID: 380-95139-B-2-A MS
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 89926

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	<2.0		121	120		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.5		121	122		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	11		121	126		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	118		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	8.5		121	128		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	121		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	120		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	68		121	184	E	ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	118		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	108		ng/L		90	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	121		ng/L		101	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	112		ng/L		93	70 - 130
Perfluoropentanoic acid (PFPeA)	27		121	139		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	120		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	2.4		121	122		ng/L		99	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*82*		*50 - 200*
13C6 PFDA	*82*		*50 - 200*
13C5 PFHxA	*84*		*50 - 200*
13C4 PFHpA	*82*		*50 - 200*
13C8 PFOA	*82*		*50 - 200*
13C9 PFNA	*79*		*50 - 200*
13C7 PFUnA	*83*		*50 - 200*
13C2 PFDoA	*79*		*50 - 200*
13C4 PFBA	*87*		*50 - 200*
13C5 PFPeA	*97*		*50 - 200*
13C3 PFBS	*99*		*50 - 200*
13C3 PFHxS	*97*		*50 - 200*
13C8 PFOS	*95*		*50 - 200*
13C2-4:2-FTS	*121*		*50 - 200*
13C2-6:2-FTS	*119*		*50 - 200*
13C2-8:2-FTS	*109*		*50 - 200*

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

Lab Sample ID: 380-95139-C-2-A MSD
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 89926

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	105		ng/L		87	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	115		ng/L		95	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	105		ng/L		87	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	112		ng/L		93	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	4.4		121	124		ng/L		99	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		121	118		ng/L		97	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	115		ng/L		95	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	9.0		121	124		ng/L		95	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	45		121	157		ng/L		92	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	29		121	152		ng/L		102	70 - 130	7	30
Perfluorononanoic acid (PFNA)	<2.0		121	116		ng/L		96	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	2.5		121	117		ng/L		95	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	11		121	127		ng/L		96	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	116		ng/L		96	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	8.5		121	125		ng/L		96	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	122		ng/L		101	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	120		ng/L		99	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	68		121	184	E	ng/L		96	70 - 130	0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	109		ng/L		90	70 - 130	8	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	103		ng/L		86	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	122		ng/L		101	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	114		ng/L		95	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	27		121	141		ng/L		94	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	121		ng/L		100	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	2.4		121	119		ng/L		97	70 - 130	2	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*87*		*50 - 200*
13C6 PFDA	*87*		*50 - 200*
13C5 PFHxA	*88*		*50 - 200*
13C4 PFHpA	*89*		*50 - 200*
13C8 PFOA	*86*		*50 - 200*
13C9 PFNA	*85*		*50 - 200*

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

Lab Sample ID: 380-95139-C-2-A MSD
Matrix: Water
Analysis Batch: 90037

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 89926

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C7 PFUnA	90		50 - 200
13C2 PFDoA	87		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	101		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	98		50 - 200
13C2-4:2-FTS	127		50 - 200
13C2-6:2-FTS	119		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: MBL 380-90006/20-A
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90006

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1

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

Lab Sample ID: MBL 380-90006/20-A
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90006

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		05/10/24 13:10	05/11/24 18:37	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*69*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C6 PFDA	*81*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C5 PFHxA	*79*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C4 PFHpA	*77*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C8 PFOA	*80*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C9 PFNA	*81*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C7 PFUnA	*83*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C2 PFDoA	*84*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C4 PFBA	*82*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C5 PFPeA	*78*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C3 PFBS	*92*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C3 PFHxS	*94*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C8 PFOS	*93*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C2-4:2-FTS	*116*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C2-6:2-FTS	*110*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*
13C2-8:2-FTS	*103*		*50 - 200*	*05/10/24 13:10*	*05/11/24 18:37*	*1*

Lab Sample ID: LCS 380-90006/22-A
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90006

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	121	108		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	121	120		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	121	108		ng/L		90	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	121	118		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	121	122		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	121	125		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	121	123		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	121	123		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	121	122		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	121	122		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	121	122		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	121	122		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	121	119		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	121	125		ng/L		103	70 - 130
Perfluorobutanoic acid (PFBA)	121	122		ng/L		101	70 - 130

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

Lab Sample ID: LCS 380-90006/22-A
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90006

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	121	125		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	121	122		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	121	124		ng/L		103	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	121	114		ng/L		94	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	121	113		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	121	118		ng/L		98	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	121	120		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	121	124		ng/L		102	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	121	126		ng/L		104	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	121	121		ng/L		100	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*81*		*50 - 200*
13C6 PFDA	*83*		*50 - 200*
13C5 PFHxA	*84*		*50 - 200*
13C4 PFHpA	*84*		*50 - 200*
13C8 PFOA	*86*		*50 - 200*
13C9 PFNA	*84*		*50 - 200*
13C7 PFUnA	*85*		*50 - 200*
13C2 PFDoA	*83*		*50 - 200*
13C4 PFBA	*87*		*50 - 200*
13C5 PFPeA	*84*		*50 - 200*
13C3 PFBS	*94*		*50 - 200*
13C3 PFHxS	*98*		*50 - 200*
13C8 PFOS	*95*		*50 - 200*
13C2-4:2-FTS	*118*		*50 - 200*
13C2-6:2-FTS	*118*		*50 - 200*
13C2-8:2-FTS	*104*		*50 - 200*

Lab Sample ID: MRL 380-90006/21-A
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90006

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.72	J	ng/L		85	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.02	J	ng/L		101	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.94	J	ng/L		96	50 - 150

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

Lab Sample ID: MRL 380-90006/21-A
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90006

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.91	J	ng/L		95	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.18	J	ng/L		108	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.30	J	ng/L		115	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.10	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.20	J	ng/L		109	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.14	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.14	J	ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.15	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.16	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.16	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.33	J	ng/L		116	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.24	J	ng/L		111	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.86	J	ng/L		92	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.98	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.03	J	ng/L		101	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*74*		*50 - 200*
13C6 PFDA	*84*		*50 - 200*
13C5 PFHxA	*76*		*50 - 200*
13C4 PFHpA	*82*		*50 - 200*
13C8 PFOA	*87*		*50 - 200*
13C9 PFNA	*85*		*50 - 200*
13C7 PFUnA	*85*		*50 - 200*
13C2 PFDoA	*82*		*50 - 200*
13C4 PFBA	*91*		*50 - 200*
13C5 PFPeA	*89*		*50 - 200*
13C3 PFBS	*86*		*50 - 200*
13C3 PFHxS	*91*		*50 - 200*
13C8 PFOS	*92*		*50 - 200*

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

Lab Sample ID: MRL 380-90006/21-A
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90006

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C2-4:2-FTS	117		50 - 200
13C2-6:2-FTS	114		50 - 200
13C2-8:2-FTS	98		50 - 200

Lab Sample ID: 380-95051-B-3-A MS
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 90006

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.4	54.4		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	59.9		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	56.9		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	58.8		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	67.3		ng/L		110	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	62.0		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	62.7		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	64.8		ng/L		107	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	61.8		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	61.1		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	63.2		ng/L		105	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.1		60.4	62.4		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	63.3		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	61.6		ng/L		102	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	65.0		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	67.1		ng/L		111	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	59.7		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	63.7		ng/L		106	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	60.4		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	57.9		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	65.3		ng/L		108	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	62.5		ng/L		104	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	63.4		ng/L		105	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	63.2		ng/L		105	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	59.2		ng/L		98	70 - 130

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

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	81		50 - 200
13C6 PFDA	70		50 - 200
13C5 PFHxA	85		50 - 200
13C4 PFHpA	83		50 - 200
13C8 PFOA	77		50 - 200
13C9 PFNA	70		50 - 200
13C7 PFUnA	73		50 - 200
13C2 PFDoA	74		50 - 200
13C4 PFBA	89		50 - 200
13C5 PFPeA	92		50 - 200
13C3 PFBS	91		50 - 200
13C3 PFHxS	97		50 - 200
13C8 PFOS	94		50 - 200
13C2-4:2-FTS	121		50 - 200
13C2-6:2-FTS	113		50 - 200
13C2-8:2-FTS	101		50 - 200

Lab Sample ID: 380-95051-B-3-B MSD
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 90006

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	52.4		ng/L		87	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	63.6		ng/L		106	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	57.2		ng/L		95	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	57.3		ng/L		95	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	64.5		ng/L		106	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	63.3		ng/L		105	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	64.9		ng/L		108	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	64.4		ng/L		107	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	63.2		ng/L		103	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	64.1		ng/L		106	70 - 130	5	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	63.2		ng/L		105	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	2.1		60.2	65.9		ng/L		106	70 - 130	6	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	62.7		ng/L		104	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	63.1		ng/L		105	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	64.6		ng/L		106	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	68.2		ng/L		113	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	59.9		ng/L		99	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	65.2		ng/L		108	70 - 130	2	30

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

Lab Sample ID: 380-95051-B-3-B MSD
Matrix: Water
Analysis Batch: 90103

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 90006

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	58.5		ng/L		97	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	63.9		ng/L		106	70 - 130	10	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	67.5		ng/L		112	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	60.2		ng/L		100	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	63.1		ng/L		105	70 - 130	0	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	67.5		ng/L		112	70 - 130	7	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	64.1		ng/L		106	70 - 130	8	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*119*		*50 - 200*
13C6 PFDA	*95*		*50 - 200*
13C5 PFHxA	*119*		*50 - 200*
13C4 PFHpA	*116*		*50 - 200*
13C8 PFOA	*110*		*50 - 200*
13C9 PFNA	*98*		*50 - 200*
13C7 PFUnA	*93*		*50 - 200*
13C2 PFDoA	*89*		*50 - 200*
13C4 PFBA	*128*		*50 - 200*
13C5 PFPeA	*143*		*50 - 200*
13C3 PFBS	*127*		*50 - 200*
13C3 PFHxS	*128*		*50 - 200*
13C8 PFOS	*115*		*50 - 200*
13C2-4:2-FTS	*182*		*50 - 200*
13C2-6:2-FTS	*160*		*50 - 200*
13C2-8:2-FTS	*123*		*50 - 200*

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

Lab Sample ID: MBL 380-89994/21-A
Matrix: Water
Analysis Batch: 90107

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 89994

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1

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

Lab Sample ID: MBL 380-89994/21-A
Matrix: Water
Analysis Batch: 90107

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 89994

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/10/24 11:08	05/11/24 13:27	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*99*		*70 - 130*	*05/10/24 11:08*	*05/11/24 13:27*	*1*
13C2 PFHxA	*101*		*70 - 130*	*05/10/24 11:08*	*05/11/24 13:27*	*1*
13C2 PFDA	*108*		*70 - 130*	*05/10/24 11:08*	*05/11/24 13:27*	*1*
13C3-GenX	*93*		*70 - 130*	*05/10/24 11:08*	*05/11/24 13:27*	*1*

Lab Sample ID: LCS 380-89994/23-A
Matrix: Water
Analysis Batch: 90107

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89994

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	24.6		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	25.9		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	27.8		ng/L		111	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	26.9		ng/L		107	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	27.7		ng/L		111	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	26.0		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	26.8		ng/L		107	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	28.6		ng/L		114	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	27.5		ng/L		110	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	26.8		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	22.5		ng/L		90	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	28.2		ng/L		113	70 - 130
Perfluorononanoic acid (PFNA)	25.1	27.8		ng/L		111	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	27.6		ng/L		110	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	25.8		ng/L		103	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	25.4		ng/L		101	70 - 130

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

Lab Sample ID: LCS 380-89994/23-A
Matrix: Water
Analysis Batch: 90107

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89994

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	22.6		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	28.1		ng/L		112	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d5-NEtFOSAA	*108*		*70 - 130*
13C2 PFHxA	*104*		*70 - 130*
13C2 PFDA	*108*		*70 - 130*
13C3-GenX	*95*		*70 - 130*

Lab Sample ID: MRL 380-89994/22-A
Matrix: Water
Analysis Batch: 90107

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89994

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.92	J	ng/L		96	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.07	J	ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.19	J	ng/L		109	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.12	J	ng/L		106	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.01	J	ng/L		100	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.88	J	ng/L		94	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.27	J	ng/L		114	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.43	J	ng/L		121	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.02	J	ng/L		101	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.03	J	ng/L		102	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.71	J	ng/L		85	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.31	J	ng/L		115	50 - 150

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

Lab Sample ID: MRL 380-89994/22-A
Matrix: Water
Analysis Batch: 90107

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89994

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	106		70 - 130
13C2 PFHxA	100		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	92		70 - 130

Lab Sample ID: 380-95033-1 MS
Matrix: Water
Analysis Batch: 90107

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 89994

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	22.7		ng/L		90	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	27.5		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	25.0		ng/L		99	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	26.9		ng/L		107	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	27.5		ng/L		110	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	25.4		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	24.3		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	28.0		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	24.6		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	27.8		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	25.5		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	26.3		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	25.8		ng/L		103	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	24.5		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	23.2		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	25.1		ng/L		100	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	23.2		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	25.2		ng/L		100	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
d5-NEtFOSAA	109		70 - 130
13C2 PFHxA	101		70 - 130
13C2 PFDA	97		70 - 130
13C3-GenX	92		70 - 130

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

Lab Sample ID: 380-95033-1 MSD
Matrix: Water
Analysis Batch: 90107

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 89994

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	23.1		ng/L		92	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	27.1		ng/L		102	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	25.8		ng/L		102	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	26.6		ng/L		106	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	26.8		ng/L		106	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	26.4		ng/L		101	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	24.9		ng/L		99	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		25.2	27.8		ng/L		108	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		25.2	24.3		ng/L		97	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	27.6		ng/L		105	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	25.5		ng/L		100	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	26.8		ng/L		104	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		25.2	25.6		ng/L		102	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	25.5		ng/L		101	70 - 130	4	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	23.5		ng/L		93	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	25.1		ng/L		100	70 - 130	0	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	22.0		ng/L		87	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	26.6		ng/L		106	70 - 130	6	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*108*		*70 - 130*
13C2 PFHxA	*105*		*70 - 130*
13C2 PFDA	*99*		*70 - 130*
13C3-GenX	*95*		*70 - 130*

GC/MS Semi VOA

Prep Batch: 90684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-1	MOANALUA WELLS	Total/NA	Water	525.2	
380-95033-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	525.2	
MB 380-90684/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-90684/23-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-90684/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-95033-1 MS	MOANALUA WELLS	Total/NA	Water	525.2	
380-95033-2 DU	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	

Analysis Batch: 91321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-1	MOANALUA WELLS	Total/NA	Water	525.2	90684
380-95033-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	90684
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	90684
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	525.2	90684
MB 380-90684/21-A	Method Blank	Total/NA	Water	525.2	90684
LCS 380-90684/23-A	Lab Control Sample	Total/NA	Water	525.2	90684
MRL 380-90684/22-A	Lab Control Sample	Total/NA	Water	525.2	90684
380-95033-1 MS	MOANALUA WELLS	Total/NA	Water	525.2	90684
380-95033-2 DU	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	90684

LCMS

Prep Batch: 89926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-1	MOANALUA WELLS	Total/NA	Water	533	
380-95033-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
380-95033-5	FB MOANALUA WELLS	Total/NA	Water	533	
MBL 380-89926/20-A	Method Blank	Total/NA	Water	533	
LCS 380-89926/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-89926/21-A	Lab Control Sample	Total/NA	Water	533	
380-95139-B-2-A MS	Matrix Spike	Total/NA	Water	533	
380-95139-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 89994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-1	MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-95033-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
380-95033-5	FB MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-95033-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-95033-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-95033-8	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
MBL 380-89994/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-89994/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-89994/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-95033-1 MS	MOANALUA WELLS	Total/NA	Water	537.1 DW	

LCMS (Continued)

Prep Batch: 89994 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-1 MSD	MOANALUA WELLS	Total/NA	Water	537.1 DW	

Prep Batch: 90006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-95033-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-95033-8	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
MBL 380-90006/20-A	Method Blank	Total/NA	Water	533	
LCS 380-90006/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-90006/21-A	Lab Control Sample	Total/NA	Water	533	
380-95051-B-3-A MS	Matrix Spike	Total/NA	Water	533	
380-95051-B-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 90037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-1	MOANALUA WELLS	Total/NA	Water	533	89926
380-95033-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	89926
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	89926
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	89926
380-95033-5	FB MOANALUA WELLS	Total/NA	Water	533	89926
MBL 380-89926/20-A	Method Blank	Total/NA	Water	533	89926
LCS 380-89926/22-A	Lab Control Sample	Total/NA	Water	533	89926
MRL 380-89926/21-A	Lab Control Sample	Total/NA	Water	533	89926
380-95139-B-2-A MS	Matrix Spike	Total/NA	Water	533	89926
380-95139-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	89926

Analysis Batch: 90103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	90006
380-95033-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	90006
380-95033-8	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	90006
MBL 380-90006/20-A	Method Blank	Total/NA	Water	533	90006
LCS 380-90006/22-A	Lab Control Sample	Total/NA	Water	533	90006
MRL 380-90006/21-A	Lab Control Sample	Total/NA	Water	533	90006
380-95051-B-3-A MS	Matrix Spike	Total/NA	Water	533	90006
380-95051-B-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	533	90006

Analysis Batch: 90107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-1	MOANALUA WELLS	Total/NA	Water	537.1	89994
380-95033-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	89994
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	89994
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	89994
380-95033-5	FB MOANALUA WELLS	Total/NA	Water	537.1	89994
380-95033-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	89994
380-95033-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	89994
380-95033-8	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	89994
MBL 380-89994/21-A	Method Blank	Total/NA	Water	537.1	89994
LCS 380-89994/23-A	Lab Control Sample	Total/NA	Water	537.1	89994
MRL 380-89994/22-A	Lab Control Sample	Total/NA	Water	537.1	89994
380-95033-1 MS	MOANALUA WELLS	Total/NA	Water	537.1	89994

LCMS (Continued)

Analysis Batch: 90107 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-95033-1 MSD	MOANALUA WELLS	Total/NA	Water	537.1	89994

Lab Chronicle

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Lab Sample ID: 380-95033-1
Date Collected: 05/07/24 09:34
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			90684	KRD3	EA POM	05/15/24 10:00
Total/NA	Analysis	525.2		1	91321	Q8LA	EA POM	05/20/24 15:58
Total/NA	Prep	533			89926	XTD8	EA POM	05/10/24 06:18
Total/NA	Analysis	533		1	90037	Y5FM	EA POM	05/10/24 21:01
Total/NA	Prep	537.1 DW			89994	A5GB	EA POM	05/10/24 11:08
Total/NA	Analysis	537.1		1	90107	SZ9R	EA POM	05/11/24 13:59

Client Sample ID: AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-95033-2
Date Collected: 05/07/24 10:30
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			90684	KRD3	EA POM	05/15/24 10:00
Total/NA	Analysis	525.2		1	91321	Q8LA	EA POM	05/20/24 16:18
Total/NA	Prep	533			89926	XTD8	EA POM	05/10/24 06:18
Total/NA	Analysis	533		1	90037	Y5FM	EA POM	05/10/24 21:11
Total/NA	Prep	537.1 DW			89994	A5GB	EA POM	05/10/24 11:08
Total/NA	Analysis	537.1		1	90107	SZ9R	EA POM	05/11/24 15:14

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-95033-3
Date Collected: 05/07/24 11:07
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			90684	KRD3	EA POM	05/15/24 10:00
Total/NA	Analysis	525.2		1	91321	Q8LA	EA POM	05/20/24 16:38
Total/NA	Prep	533			89926	XTD8	EA POM	05/10/24 06:18
Total/NA	Analysis	533		1	90037	Y5FM	EA POM	05/10/24 21:22
Total/NA	Prep	537.1 DW			89994	A5GB	EA POM	05/10/24 11:08
Total/NA	Analysis	537.1		1	90107	SZ9R	EA POM	05/11/24 15:25

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-95033-4
Date Collected: 05/07/24 10:01
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			90684	KRD3	EA POM	05/15/24 10:00
Total/NA	Analysis	525.2		1	91321	Q8LA	EA POM	05/20/24 16:59
Total/NA	Prep	533			89926	XTD8	EA POM	05/10/24 06:18
Total/NA	Analysis	533		1	90037	Y5FM	EA POM	05/10/24 21:43
Total/NA	Prep	537.1 DW			89994	A5GB	EA POM	05/10/24 11:08
Total/NA	Analysis	537.1		1	90107	SZ9R	EA POM	05/11/24 15:36

Lab Chronicle

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB MOANALUA WELLS
Lab Sample ID: 380-95033-5
Date Collected: 05/07/24 09:34
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			89926	XTD8	EA POM	05/10/24 06:18
Total/NA	Analysis	533		1	90037	Y5FM	EA POM	05/10/24 21:54
Total/NA	Prep	537.1 DW			89994	A5GB	EA POM	05/10/24 11:08
Total/NA	Analysis	537.1		1	90107	SZ9R	EA POM	05/11/24 15:46

Client Sample ID: FB AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-95033-6
Date Collected: 05/07/24 10:30
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			90006	N8NE	EA POM	05/10/24 13:10
Total/NA	Analysis	533		1	90103	SZ9R	EA POM	05/11/24 19:41
Total/NA	Prep	537.1 DW			89994	A5GB	EA POM	05/10/24 11:08
Total/NA	Analysis	537.1		1	90107	SZ9R	EA POM	05/11/24 15:57

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-95033-7
Date Collected: 05/07/24 11:07
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			90006	N8NE	EA POM	05/10/24 13:10
Total/NA	Analysis	533		1	90103	SZ9R	EA POM	05/11/24 19:52
Total/NA	Prep	537.1 DW			89994	A5GB	EA POM	05/10/24 11:08
Total/NA	Analysis	537.1		1	90107	SZ9R	EA POM	05/11/24 16:18

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-95033-8
Date Collected: 05/07/24 10:01
Matrix: Water
Date Received: 05/09/24 10:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			90006	N8NE	EA POM	05/10/24 13:10
Total/NA	Analysis	533		1	90103	SZ9R	EA POM	05/11/24 20:03
Total/NA	Prep	537.1 DW			89994	A5GB	EA POM	05/10/24 11:08
Total/NA	Analysis	537.1		1	90107	SZ9R	EA POM	05/11/24 16:29

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

Accreditation/Certification Summary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

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	01-31-25

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	Water	1-Methylnaphthalene
525.2	525.2	Water	2,4'-DDD
525.2	525.2	Water	2,4'-DDE
525.2	525.2	Water	2,4'-DDT
525.2	525.2	Water	2,4-Dinitrotoluene
525.2	525.2	Water	2,6-Dinitrotoluene
525.2	525.2	Water	2-Methylnaphthalene
525.2	525.2	Water	4,4'-DDD
525.2	525.2	Water	4,4'-DDE
525.2	525.2	Water	4,4'-DDT
525.2	525.2	Water	Acetochlor
525.2	525.2	Water	alpha-BHC
525.2	525.2	Water	alpha-Chlordane
525.2	525.2	Water	beta-BHC
525.2	525.2	Water	Chlorobenzilate
525.2	525.2	Water	Chloroneb
525.2	525.2	Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Water	Chlorpyrifos
525.2	525.2	Water	delta-BHC
525.2	525.2	Water	Diclorvos (DDVP)
525.2	525.2	Water	Endosulfan I (Alpha)
525.2	525.2	Water	Endosulfan II (Beta)
525.2	525.2	Water	Endosulfan sulfate
525.2	525.2	Water	Endrin aldehyde
525.2	525.2	Water	EPTC
525.2	525.2	Water	gamma-Chlordane
525.2	525.2	Water	Isophorone
525.2	525.2	Water	Malathion
525.2	525.2	Water	Parathion
525.2	525.2	Water	Pendimethalin (Penoxaline)
525.2	525.2	Water	Terbacil
525.2	525.2	Water	Terbuthylazine
525.2	525.2	Water	Total Permethrin (mixed isomers)
525.2	525.2	Water	trans-Nonachlor

Method Summary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
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

Laboratory References:

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

Sample Summary

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

Job ID: 380-95033-1
SDG: 525.2, 533, 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-95033-1	MOANALUA WELLS	Water	05/07/24 09:34	05/09/24 10:44
380-95033-2	AIEA GULCH WELLS PUMP 2	Water	05/07/24 10:30	05/09/24 10:44
380-95033-3	AIEA WELLS PUMPS 1&2 (260) P2	Water	05/07/24 11:07	05/09/24 10:44
380-95033-4	HALAWA WELLS UNITS 1 & 2 P1	Water	05/07/24 10:01	05/09/24 10:44
380-95033-5	FB MOANALUA WELLS	Water	05/07/24 09:34	05/09/24 10:44
380-95033-6	FB AIEA GULCH WELLS PUMP 2	Water	05/07/24 10:30	05/09/24 10:44
380-95033-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	05/07/24 11:07	05/09/24 10:44
380-95033-8	FB HALAWA WELLS UNITS 1 & 2 P1	Water	05/07/24 10:01	05/09/24 10:44

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

Chain of Custody Record

eurofins

Client Information	Sampler: bailey	Lab PM: Arada Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757 2
Client Contact: Dr Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: City & County of Honolulu	PWSID:	Analysis Requested		Job #:
Address: 630 South Beretania Street, Chemistry Lab	Due Date Requested:			Preservation Codes: A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify); Other:
City: Honolulu	TAT Requested (days):			
State, Zip: HI 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8 C18	525.2_PREC (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code				R	A	Q	QA	Y	1		
MOANALUA WELLS	05-07-2024	0934	G	Water							3	3		chlorinated
AIEA GULCH WELLS PUMP2	05-07-2024	1030	G	Water							3	3		chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	05-07-2024	1107	G	Water							3	3		
HALAWA WELLS UNITS 1&2 P1	05-07-2024	1001	G	Water							3	3		
FB MOANALUA WELLS	05-07-2024	0934		Water							1	1		
FB AIEA GULCH WELLS PUMP2	05-07-2024	1030		Water							1	1		
FB AIEA WELLS PUMPS 1&2 (260)	05-07-2024	1107		Water							1	1		
FB HALAWA WELLS UNITS 1&2	05-07-2024	1001		Water							1	1		

380-95033 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: ① 7762 9821 9848

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: FED EX ② 7762 9821 9859

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
bailey	08 MAY 2024 1400	HBWS	G. REITNER	05/09/2024 10:44	EEAP
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: 757A ① 3.6°-0.1°=3.5° ② 4.9°-0.1°=4.8° GEL-FROZEN

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-95033-1
SDG Number: 525.2, 533, 537.1

Login Number: 95033
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	

eurofins | Environment Testing

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

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 [SUBCONTRACT]
625, 8015
RUSH Weekly Red Hill

JOB NUMBER

380-96896-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

myEOL

Eurofins Eaton Analytical Pomona

Job Notes

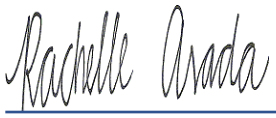
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-96896-1
SDG: 625, 8015

Qualifiers

GC 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.

GC Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased

Glossary

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

Job ID: 380-96896-1 — Eurofins Eaton Analytical Pomona

Job Narrative
380-96896-1

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 5/22/2024 10:34 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 0.7°C and 1.3°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.

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

Diesel Range Organics
Method 8015B_DRO_LL_CS: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-444625. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8015B_DRO_LL_CS: The method reporting limit check (MRL) for preparation batch 570-444625 and analytical batch 570-450548 recovered outside control limits for the following analytes: C10-C28. These analytes were biased high in the MRL and were not detected in the associated samples; therefore, the data have been reported.

Method 8015B: The following sample(s) was re-prepared outside of preparation holding time due to the high TPH detection in the initial extraction. Data excluded due to this failure. MOANALUA WELLS (380-96896-1).

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

Detection Summary

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

Job ID: 380-96896-1
SDG: 625, 8015

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-96896-1
PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-96896-2
PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-96896-3
PWSID Number: HI0000331

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-96896-4
PWSID Number: HI0000331

No Detections.

Client Sample ID: TB: MOANALUA WELLS — Lab Sample ID: 380-96896-5

No Detections.

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-96896-6

No Detections.

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-96896-7

No Detections.

Client Sample ID: TB: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-96896-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-96896-1
Date Collected: 05/20/24 10:09
Matrix: Drinking Water
Date Received: 05/22/24 10:34
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			05/31/24 19:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*38 - 134*		*05/31/24 19:39*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Acenaphthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Biphenyl	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Chrysene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/27/24 00:00	06/22/24 15:11	1
Fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Fluorene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Naphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Phenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1
Pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 15:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*57*		*27 - 133*	*05/27/24 00:00*	*06/22/24 15:11*	*1*
(d10-Phenanthrene)	*65*		*43 - 129*	*05/27/24 00:00*	*06/22/24 15:11*	*1*
(d12-Chrysene)	*78*		*52 - 144*	*05/27/24 00:00*	*06/22/24 15:11*	*1*
(d12-Perylene)	*94*		*36 - 161*	*05/27/24 00:00*	*06/22/24 15:11*	*1*
(d8-Naphthalene)	*52*		*25 - 125*	*05/27/24 00:00*	*06/22/24 15:11*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-96896-2
Date Collected: 05/20/24 11:01
Matrix: Drinking Water
Date Received: 05/22/24 10:34
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			05/31/24 20:03	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 05/20/24 11:01
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96896-2

Matrix: Drinking Water
PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*67*		*38 - 134*		*05/31/24 20:03*	*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)	<27		27		ug/L		05/26/24 10:42	06/13/24 13:41	1
Motor Oil Range Organics [C24-C36]	<27		27		ug/L		05/26/24 10:42	06/13/24 13:41	1
C8-C18	<27		27		ug/L		05/26/24 10:42	06/13/24 13:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	*108*		*60 - 130*	*05/26/24 10:42*	*06/13/24 13:41*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Acenaphthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Biphenyl	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Chrysene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/27/24 00:00	06/22/24 16:59	1
Fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Fluorene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Naphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Phenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1
Pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 16:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	*76*		*27 - 133*	*05/27/24 00:00*	*06/22/24 16:59*	*1*
(d10-Phenanthrene)	*89*		*43 - 129*	*05/27/24 00:00*	*06/22/24 16:59*	*1*
(d12-Chrysene)	*71*		*52 - 144*	*05/27/24 00:00*	*06/22/24 16:59*	*1*
(d12-Perylene)	*57*		*36 - 161*	*05/27/24 00:00*	*06/22/24 16:59*	*1*
(d8-Naphthalene)	*69*		*25 - 125*	*05/27/24 00:00*	*06/22/24 16:59*	*1*

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

Date Collected: 05/20/24 11:27
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96896-3

Matrix: Drinking Water
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			05/31/24 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*76*		*38 - 134*		*05/31/24 20:27*	*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		05/26/24 10:42	06/13/24 14:01	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		05/26/24 10:42	06/13/24 14:01	1
C8-C18	<25		25		ug/L		05/26/24 10:42	06/13/24 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*106*		*60 - 130*	*05/26/24 10:42*	*06/13/24 14:01*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Acenaphthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Biphenyl	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Chrysene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/27/24 00:00	06/22/24 18:48	1
Fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Fluorene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Naphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Phenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1
Pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 18:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*66*		*27 - 133*	*05/27/24 00:00*	*06/22/24 18:48*	*1*
(d10-Phenanthrene)	*74*		*43 - 129*	*05/27/24 00:00*	*06/22/24 18:48*	*1*
(d12-Chrysene)	*65*		*52 - 144*	*05/27/24 00:00*	*06/22/24 18:48*	*1*
(d12-Perylene)	*68*		*36 - 161*	*05/27/24 00:00*	*06/22/24 18:48*	*1*
(d8-Naphthalene)	*60*		*25 - 125*	*05/27/24 00:00*	*06/22/24 18:48*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 05/20/24 10:35
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96896-4

Matrix: Drinking Water
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			05/31/24 20:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*67*		*38 - 134*		*05/31/24 20:51*	*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		05/26/24 10:42	06/13/24 14:22	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		05/26/24 10:42	06/13/24 14:22	1
C8-C18	<25		25		ug/L		05/26/24 10:42	06/13/24 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*118*		*60 - 130*	*05/26/24 10:42*	*06/13/24 14:22*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Acenaphthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Biphenyl	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Chrysene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/27/24 00:00	06/22/24 20:36	1
Fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Fluorene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Naphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Phenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1
Pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 20:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*61*		*27 - 133*	*05/27/24 00:00*	*06/22/24 20:36*	*1*
(d10-Phenanthrene)	*68*		*43 - 129*	*05/27/24 00:00*	*06/22/24 20:36*	*1*
(d12-Chrysene)	*62*		*52 - 144*	*05/27/24 00:00*	*06/22/24 20:36*	*1*
(d12-Perylene)	*52*		*36 - 161*	*05/27/24 00:00*	*06/22/24 20:36*	*1*
(d8-Naphthalene)	*54*		*25 - 125*	*05/27/24 00:00*	*06/22/24 20:36*	*1*

Client Sample ID: TB: MOANALUA WELLS

Lab Sample ID: 380-96896-5
Matrix: Water
Date Collected: 05/20/24 10:09
Date Received: 05/22/24 10:34

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			05/31/24 21:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*73*		*38 - 134*		*05/31/24 21:15*	*1*

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-96896-6
Matrix: Water
Date Collected: 05/20/24 11:01
Date Received: 05/22/24 10:34

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			05/31/24 21:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*66*		*38 - 134*		*05/31/24 21:39*	*1*

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

Lab Sample ID: 380-96896-7
Matrix: Water
Date Collected: 05/20/24 11:27
Date Received: 05/22/24 10:34

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			05/31/24 22:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*67*		*38 - 134*		*05/31/24 22:27*	*1*

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

Lab Sample ID: 380-96896-8
Matrix: Water
Date Collected: 05/20/24 10:35
Date Received: 05/22/24 10:34

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			05/31/24 22:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*73*		*38 - 134*		*05/31/24 22:51*	*1*

Surrogate Summary

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

Job ID: 380-96896-1
SDG: 625, 8015

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB1 (38-134)
380-96896-1	MOANALUA WELLS	74
380-96896-2	AIEA GULCH WELLS PUMP 2	67
380-96896-3	AIEA WELLS PUMPS 1&2 (260) P2	76
380-96896-4	HALAWA WELLS UNITS 1 & 2 P1	67

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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)
380-96896-5	TB: MOANALUA WELLS	73
380-96896-6	TB: AIEA GULCH WELLS PUMP 2	66
380-96896-7	TB: AIEA WELLS PUMPS 1&2 (260) P2	67
380-96896-8	TB: HALAWA WELLS UNITS 1 & 2 P1	73
380-97122-A-1 MS	Matrix Spike	80
380-97122-A-1 MSD	Matrix Spike Duplicate	76
LCS 570-446273/4	Lab Control Sample	77
LCSD 570-446273/7	Lab Control Sample Dup	75
MB 570-446273/6	Method Blank	71
MRL 570-446273/3	Lab Control Sample	72

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)
380-96896-2	AIEA GULCH WELLS PUMP 2	108
380-96896-3	AIEA WELLS PUMPS 1&2 (260) P2	106
380-96896-4	HALAWA WELLS UNITS 1 & 2 P1	118

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Surrogate Summary

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

Job ID: 380-96896-1
SDG: 625, 8015

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTCSN1
Lab Sample ID	Client Sample ID	(60-130)
LCS 570-444625/2-A	Lab Control Sample	110
LCSD 570-444625/3-A	Lab Control Sample Dup	118
MB 570-444625/1-A	Method Blank	109
MRL 570-444625/4-A	Lab Control Sample	116

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
118222-B1	Method Blank	85	90	86	84	77
118222-BS1	Lab Control Sample	89	100	76	84	87
118222-BS2	Lab Control Sample Dup	83	96	74	76	84

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
380-96896-1	MOANALUA WELLS	57	65	78	52	94
380-96896-2	AIEA GULCH WELLS PUMP 2	76	89	71	69	57
380-96896-3	AIEA WELLS PUMPS 1&2 (260) P2	66	74	65	60	68
380-96896-4	HALAWA WELLS UNITS 1 & 2 P1	61	68	62	54	52

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

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

Lab Sample ID: MB 570-446273/6
Matrix: Water
Analysis Batch: 446273

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			05/31/24 16:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*38 - 134*		*05/31/24 16:56*	*1*

Lab Sample ID: LCS 570-446273/4
Matrix: Water
Analysis Batch: 446273

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)			400	338		ug/L		84	78 - 120		

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

Lab Sample ID: LCSD 570-446273/7
Matrix: Water
Analysis Batch: 446273

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)			400	321		ug/L		80	78 - 120	5	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*75*		*38 - 134*

Lab Sample ID: MRL 570-446273/3
Matrix: Water
Analysis Batch: 446273

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	9.54	J	ug/L		95	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*72*		*38 - 134*

Lab Sample ID: 380-97122-A-1 MS
Matrix: Water
Analysis Batch: 446273

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		
Gasoline Range Organics (C4-C13)	<10		400	320		ug/L		80	68 - 122		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*80*		*38 - 134*

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

Lab Sample ID: 380-97122-A-1 MSD
Matrix: Water
Analysis Batch: 446273

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
Gasoline Range Organics (C4-C13)	<10		400	317		ug/L		79	68 - 122	1	18

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*76*		*38 - 134*

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

Lab Sample ID: MB 570-444625/1-A
Matrix: Water
Analysis Batch: 450548

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 444625

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25		ug/L		05/26/24 10:41	06/13/24 12:18	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		05/26/24 10:41	06/13/24 12:18	1
C8-C18	<25		25		ug/L		05/26/24 10:41	06/13/24 12:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*109*		*60 - 130*	*05/26/24 10:41*	*06/13/24 12:18*	*1*

Lab Sample ID: LCS 570-444625/2-A
Matrix: Water
Analysis Batch: 450548

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 444625

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			1600	1540		ug/L		96	56 - 127		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*110*		*60 - 130*

Lab Sample ID: LCSD 570-444625/3-A
Matrix: Water
Analysis Batch: 450548

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 444625

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			1600	1750		ug/L		109	56 - 127	13	23

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*118*		*60 - 130*

Lab Sample ID: MRL 570-444625/4-A
Matrix: Water
Analysis Batch: 450548

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 444625

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			0.0200	0.0326	^3+	mg/L		163	50 - 150		

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

Lab Sample ID: MRL 570-444625/4-A
Matrix: Water
Analysis Batch: 450548

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 444625

Surrogate	MRL %Recovery	MRL Qualifier	Limits
n-Octacosane (Surr)	*116*		*60 - 130*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Lab Sample ID: 118222-B1
Matrix: BlankMatrix
Analysis Batch: O-45088

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-45088_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Acenaphthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Acenaphthylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Biphenyl	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Chrysene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Dibenzothiophene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		05/27/24 00:00	06/22/24 09:45	1
Fluoranthene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Fluorene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Naphthalene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Perylene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Phenanthrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1
Pyrene	ND		0.005	0.001	µg/L		05/27/24 00:00	06/22/24 09:45	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	*85*		*27 - 133*	*05/27/24 00:00*	*06/22/24 09:45*	*1*
(d10-Phenanthrene)	*90*		*43 - 129*	*05/27/24 00:00*	*06/22/24 09:45*	*1*
(d12-Chrysene)	*86*		*52 - 144*	*05/27/24 00:00*	*06/22/24 09:45*	*1*
(d12-Perylene)	*77*		*36 - 161*	*05/27/24 00:00*	*06/22/24 09:45*	*1*
(d8-Naphthalene)	*84*		*25 - 125*	*05/27/24 00:00*	*06/22/24 09:45*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 118222-BS1
Matrix: BlankMatrix
Analysis Batch: O-45088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-45088_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			0.5	0.436		µg/L		87	31 - 128		
1-Methylphenanthrene			0.5	0.498		µg/L		100	66 - 127		
2,3,5-Trimethylnaphthalene			0.5	0.473		µg/L		95	55 - 122		
2,6-Dimethylnaphthalene			0.5	0.453		µg/L		91	48 - 120		
2-Methylnaphthalene			0.5	0.426		µg/L		85	47 - 130		
Acenaphthene			0.5	0.449		µg/L		90	53 - 131		
Acenaphthylene			0.5	0.448		µg/L		90	43 - 140		
Anthracene			0.5	0.455		µg/L		91	58 - 135		
Benz[a]anthracene			0.5	0.616		µg/L		123	55 - 145		
Benzo[a]pyrene			0.5	0.427		µg/L		85	51 - 143		
Benzo[b]fluoranthene			0.5	0.602		µg/L		120	46 - 165		
Benzo[e]pyrene			0.5	0.406		µg/L		81	42 - 152		
Benzo[g,h,i]perylene			0.5	0.398		µg/L		80	63 - 133		
Benzo[k]fluoranthene			0.5	0.498		µg/L		100	56 - 145		
Biphenyl			0.5	0.445		µg/L		89	56 - 119		
Chrysene			0.5	0.526		µg/L		105	56 - 141		
Dibenz[a,h]anthracene			0.5	0.521		µg/L		104	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.297		µg/L		59	50 - 150		
Dibenzothiophene			0.5	0.493		µg/L		99	46 - 126		
Disalicylidenepropanediamine			50	40.5		µg/L		81	50 - 150		
Fluoranthene			0.5	0.518		µg/L		104	60 - 146		
Fluorene			0.5	0.467		µg/L		93	58 - 131		
Indeno[1,2,3-cd]pyrene			0.5	0.486		µg/L		97	50 - 151		
Naphthalene			0.5	0.408		µg/L		82	41 - 126		
Perylene			0.5	0.441		µg/L		88	48 - 141		
Phenanthrene			0.5	0.482		µg/L		96	67 - 127		
Pyrene			0.5	0.498		µg/L		100	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*89*		*27 - 133*
(d10-Phenanthrene)	*100*		*43 - 129*
(d12-Chrysene)	*76*		*52 - 144*
(d12-Perylene)	*87*		*36 - 161*
(d8-Naphthalene)	*84*		*25 - 125*

Lab Sample ID: 118222-BS2
Matrix: BlankMatrix
Analysis Batch: O-45088

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45088_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.411		µg/L		82	31 - 128	6	30
1-Methylphenanthrene			0.5	0.464		µg/L		93	66 - 127	7	30
2,3,5-Trimethylnaphthalene			0.5	0.451		µg/L		90	55 - 122	5	30
2,6-Dimethylnaphthalene			0.5	0.422		µg/L		84	48 - 120	8	30
2-Methylnaphthalene			0.5	0.404		µg/L		81	47 - 130	5	30
Acenaphthene			0.5	0.414		µg/L		83	53 - 131	8	30
Acenaphthylene			0.5	0.419		µg/L		84	43 - 140	7	30
Anthracene			0.5	0.43		µg/L		86	58 - 135	6	30

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 118222-BS2
Matrix: BlankMatrix
Analysis Batch: O-45088

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45088_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benz[a]anthracene			0.5	0.586		µg/L		117	55 - 145	5	30
Benzo[a]pyrene			0.5	0.416		µg/L		83	51 - 143	2	30
Benzo[b]fluoranthene			0.5	0.563		µg/L		113	46 - 165	6	30
Benzo[e]pyrene			0.5	0.403		µg/L		81	42 - 152	0	30
Benzo[g,h,i]perylene			0.5	0.436		µg/L		87	63 - 133	8	30
Benzo[k]fluoranthene			0.5	0.467		µg/L		93	56 - 145	7	30
Biphenyl			0.5	0.418		µg/L		84	56 - 119	6	30
Chrysene			0.5	0.503		µg/L		101	56 - 141	4	30
Dibenz[a,h]anthracene			0.5	0.521		µg/L		104	55 - 150	0	30
Dibenzo[a,l]pyrene			0.5	0.264		µg/L		53	50 - 150	11	30
Dibenzothiophene			0.5	0.477		µg/L		95	46 - 126	4	30
Disalicylidenepropanediamine			50	40.5		µg/L		81	50 - 150	0	30
Fluoranthene			0.5	0.496		µg/L		99	60 - 146	5	30
Fluorene			0.5	0.442		µg/L		88	58 - 131	6	30
Indeno[1,2,3-cd]pyrene			0.5	0.475		µg/L		95	50 - 151	2	30
Naphthalene			0.5	0.384		µg/L		77	41 - 126	6	30
Perylene			0.5	0.429		µg/L		86	48 - 141	2	30
Phenanthrene			0.5	0.46		µg/L		92	67 - 127	4	30
Pyrene			0.5	0.479		µg/L		96	54 - 156	4	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*83*		*27 - 133*
(d10-Phenanthrene)	*96*		*43 - 129*
(d12-Chrysene)	*74*		*52 - 144*
(d12-Perylene)	*84*		*36 - 161*
(d8-Naphthalene)	*76*		*25 - 125*

GC VOA

Analysis Batch: 446273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96896-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	
380-96896-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B GRO LL	
380-96896-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B GRO LL	
380-96896-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	
380-96896-5	TB: MOANALUA WELLS	Total/NA	Water	8015B GRO LL	
380-96896-6	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015B GRO LL	
380-96896-7	TB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	8015B GRO LL	
380-96896-8	TB: HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	8015B GRO LL	
MB 570-446273/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-446273/4	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-446273/7	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-446273/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-97122-A-1 MS	Matrix Spike	Total/NA	Water	8015B GRO LL	
380-97122-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B GRO LL	

GC Semi VOA

Prep Batch: 444625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96896-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	3510C	
380-96896-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	3510C	
380-96896-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	3510C	
MB 570-444625/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-444625/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-444625/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MRL 570-444625/4-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 450548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96896-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B	444625
380-96896-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B	444625
380-96896-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B	444625
MB 570-444625/1-A	Method Blank	Total/NA	Water	8015B	444625
LCS 570-444625/2-A	Lab Control Sample	Total/NA	Water	8015B	444625
LCSD 570-444625/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	444625
MRL 570-444625/4-A	Lab Control Sample	Total/NA	Water	8015B	444625

Subcontract

Analysis Batch: O-45088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96896-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45088_P
380-96896-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45088_P
380-96896-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45088_P
380-96896-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45088_P
118222-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45088_P
118222-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45088_P

Subcontract (Continued)

Analysis Batch: O-45088 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
118222-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45088_P

Prep Batch: O-45088_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96896-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
380-96896-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
380-96896-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	EPA_625	
380-96896-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	EPA_625	
118222-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
118222-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
118222-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-96896-1
SDG: 625, 8015

Client Sample ID: MOANALUA WELLS
Date Collected: 05/20/24 10:09
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96896-1
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	446273	A9VE	EET CAL 4	05/31/24 19:39
Total/NA	Prep	EPA_625		1	O-45088_P			05/27/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45088	YC		06/22/24 15:11

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 05/20/24 11:01
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96896-2
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	446273	A9VE	EET CAL 4	05/31/24 20:03
Total/NA	Prep	3510C			444625	TR8L	EET CAL 4	05/26/24 10:42
Total/NA	Analysis	8015B		1	450548	SP9M	EET CAL 4	06/13/24 13:41
Total/NA	Prep	EPA_625		1	O-45088_P			05/27/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45088	YC		06/22/24 16:59

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/20/24 11:27
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96896-3
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	446273	A9VE	EET CAL 4	05/31/24 20:27
Total/NA	Prep	3510C			444625	TR8L	EET CAL 4	05/26/24 10:42
Total/NA	Analysis	8015B		1	450548	SP9M	EET CAL 4	06/13/24 14:01
Total/NA	Prep	EPA_625		1	O-45088_P			05/27/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45088	YC		06/22/24 18:48

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 05/20/24 10:35
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96896-4
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	446273	A9VE	EET CAL 4	05/31/24 20:51
Total/NA	Prep	3510C			444625	TR8L	EET CAL 4	05/26/24 10:42
Total/NA	Analysis	8015B		1	450548	SP9M	EET CAL 4	06/13/24 14:22
Total/NA	Prep	EPA_625		1	O-45088_P			05/27/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45088	YC		06/22/24 20:36

Client Sample ID: TB: MOANALUA WELLS
Date Collected: 05/20/24 10:09
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96896-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	446273	A9VE	EET CAL 4	05/31/24 21:15

Lab Chronicle

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

Job ID: 380-96896-1
SDG: 625, 8015

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-96896-6
Date Collected: 05/20/24 11:01
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	446273	A9VE	EET CAL 4	05/31/24 21:39

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-96896-7
Date Collected: 05/20/24 11:27
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	446273	A9VE	EET CAL 4	05/31/24 22:27

Client Sample ID: TB: HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-96896-8
Date Collected: 05/20/24 10:35
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	446273	A9VE	EET CAL 4	05/31/24 22:51

Laboratory References:

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

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 [SUBCONTRACT]

Job ID: 380-96896-1
SDG: 625, 8015

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	9257304	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	02-02-25
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 [SUBCONTRACT]

Job ID: 380-96896-1
SDG: 625, 8015

Method	Method Description	Protocol	Laboratory
8015B GRO LL	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	EET CAL 4
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

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

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 [SUBCONTRACT]

Job ID: 380-96896-1
SDG: 625, 8015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-96896-1	MOANALUA WELLS	Drinking Water	05/20/24 10:09	05/22/24 10:34	HI0000331
380-96896-2	AIEA GULCH WELLS PUMP 2	Drinking Water	05/20/24 11:01	05/22/24 10:34	HI0000331
380-96896-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	05/20/24 11:27	05/22/24 10:34	HI0000331
380-96896-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	05/20/24 10:35	05/22/24 10:34	HI0000331
380-96896-5	TB: MOANALUA WELLS	Water	05/20/24 10:09	05/22/24 10:34	
380-96896-6	TB: AIEA GULCH WELLS PUMP 2	Water	05/20/24 11:01	05/22/24 10:34	
380-96896-7	TB: AIEA WELLS PUMPS 1&2 (260) P2	Water	05/20/24 11:27	05/22/24 10:34	
380-96896-8	TB: HALAWA WELLS UNITS 1 & 2 P1	Water	05/20/24 10:35	05/22/24 10:34	

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

June 27, 2024

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

Project Name: RED-HILL Project # 38001111 Job # 380-96896-1
Physis Project ID: 1407003-513

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 5/23/2024. 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,
misty mercier
Misty Mercier
714 602-5320
Extension 202
mistymercier@physislabs.com

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-513

RED-HILL Project # 38001111 Job # 380-96896-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
118223	MOANALUA WELLS	380-96896-1	5/20/2024	10:09	Samplewater	Not Specified
118224	AIEA GULCH WELLS PUMP 2	380-96896-2	5/20/2024	11:01	Samplewater	Not Specified
118225	AIEA WELLS PUMPS 1&2 (260) P2	380-96896-3	5/20/2024	11:27	Samplewater	Not Specified
118226	HALAWA WELLS UNITS 1 & 2 P1	380-96896-4	5/20/2024	10:35	Samplewater	Not Specified

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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

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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 MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) 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

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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.

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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

PHYSIS Project ID: 1407003-513
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-96896-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118223-R1	**MOANALUA WELLS 380-96896-1**	**Matrix:**	**Samplewater**				**Sampled:**	**20-May-24 10:09**		**Received:**	**23-May-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45088	27-May-24	22-Jun-24
Sample ID: 118224-R1	**AIEA GULCH WELLS PUMP 2 380-9**	**Matrix:**	**Samplewater**				**Sampled:**	**20-May-24 11:01**		**Received:**	**23-May-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45088	27-May-24	22-Jun-24
Sample ID: 118225-R1	**AIEA WELLS PUMPS 1&2 (260) P2 3**	**Matrix:**	**Samplewater**				**Sampled:**	**20-May-24 11:27**		**Received:**	**23-May-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45088	27-May-24	22-Jun-24
Sample ID: 118226-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**	**Matrix:**	**Samplewater**				**Sampled:**	**20-May-24 10:35**		**Received:**	**23-May-24**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45088	27-May-24	22-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118223-R1	**MOANALUA WELLS 380-96896-1**		**Matrix: Samplewater**				**Sampled: 20-May-24 10:09**			**Received: 23-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	57	1			Total		O-45088	27-May-24	22-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	65	1			Total		O-45088	27-May-24	22-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	78	1			Total		O-45088	27-May-24	22-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	94	1			Total		O-45088	27-May-24	22-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	52	1			Total		O-45088	27-May-24	22-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24

PHYSIS Project ID: 1407003-513
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-96896-1

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-45088	27-May-24	22-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118224-R1	**AIEA GULCH WELLS PUMP 2 380-9**	**Matrix: Samplewater**					**Sampled: 20-May-24 11:01**			**Received: 23-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	76	1			Total		O-45088	27-May-24	22-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	89	1			Total		O-45088	27-May-24	22-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	71	1			Total		O-45088	27-May-24	22-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	57	1			Total		O-45088	27-May-24	22-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	69	1			Total		O-45088	27-May-24	22-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24

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-45088	27-May-24	22-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118225-R1	**AIEA WELLS PUMPS 1&2 (260) P2 3 Matrix: Samplewater**						**Sampled: 20-May-24 11:27**			**Received: 23-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	66	1			Total		O-45088	27-May-24	22-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	74	1			Total		O-45088	27-May-24	22-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	65	1			Total		O-45088	27-May-24	22-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	68	1			Total		O-45088	27-May-24	22-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	60	1			Total		O-45088	27-May-24	22-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24

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-45088	27-May-24	22-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118226-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**	**Matrix: Samplewater**					**Sampled: 20-May-24 10:35**			**Received: 23-May-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	61	1			Total		O-45088	27-May-24	22-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	68	1			Total		O-45088	27-May-24	22-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	62	1			Total		O-45088	27-May-24	22-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	52	1			Total		O-45088	27-May-24	22-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	54	1			Total		O-45088	27-May-24	22-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24

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-45088	27-May-24	22-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45088	27-May-24	22-Jun-24

QUALITY CONTROL REPORT

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118222-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-45088		Prepared: 27-May-24					Analyzed: 22-Jun-24	
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 118222-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-45088		Prepared: 27-May-24					Analyzed: 22-Jun-24	
Disalicylidenepropanediamin	Total	40.5	1	0.05	0.1	µg/L	50	0	81	50 - 150%	PASS			
Sample ID: 118222-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-45088		Prepared: 27-May-24					Analyzed: 22-Jun-24	
Disalicylidenepropanediamin	Total	40.5	1	0.05	0.1	µg/L	50	0	81	50 - 150%	PASS	0	30 PASS	

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118222-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-45088		Prepared: 27-May-24				Analyzed: 22-Jun-24	
(d10-Acenaphthene)	Total	85	1			% Recovery	100	85		27 - 133%		PASS	
(d10-Phenanthrene)	Total	90	1			% Recovery	100	90		43 - 129%		PASS	
(d12-Chrysene)	Total	86	1			% Recovery	100	86		52 - 144%		PASS	
(d12-Perylene)	Total	77	1			% Recovery	100	77		36 - 161%		PASS	
(d8-Naphthalene)	Total	84	1			% Recovery	100	84		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							
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L							

PHYSIS Project ID: 1407003-513
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-96896-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118222-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
		Method: EPA 625.1				Batch ID: O-45088		Prepared: 27-May-24				Analyzed: 22-Jun-24	
(d10-Acenaphthene)	Total	89	1			% Recovery	100	0	89	27 - 133%		PASS	
(d10-Phenanthrene)	Total	100	1			% Recovery	100	0	100	43 - 129%		PASS	
(d12-Chrysene)	Total	76	1			% Recovery	100	0	76	52 - 144%		PASS	
(d12-Perylene)	Total	87	1			% Recovery	100	0	87	36 - 161%		PASS	
(d8-Naphthalene)	Total	84	1			% Recovery	100	0	84	25 - 125%		PASS	
1-Methylnaphthalene	Total	0.436	1	0.001	0.005	µg/L	0.5	0	87	31 - 128%		PASS	
1-Methylphenanthrene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	66 - 127%		PASS	
2,3,5-Trimethylnaphthalene	Total	0.473	1	0.001	0.005	µg/L	0.5	0	95	55 - 122%		PASS	
2,6-Dimethylnaphthalene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	48 - 120%		PASS	
2-Methylnaphthalene	Total	0.426	1	0.001	0.005	µg/L	0.5	0	85	47 - 130%		PASS	
Acenaphthene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	53 - 131%		PASS	
Acenaphthylene	Total	0.448	1	0.001	0.005	µg/L	0.5	0	90	43 - 140%		PASS	
Anthracene	Total	0.455	1	0.001	0.005	µg/L	0.5	0	91	58 - 135%		PASS	
Benz[a]anthracene	Total	0.616	1	0.001	0.005	µg/L	0.5	0	123	55 - 145%		PASS	
Benzo[a]pyrene	Total	0.427	1	0.001	0.005	µg/L	0.5	0	85	51 - 143%		PASS	
Benzo[b]fluoranthene	Total	0.602	1	0.001	0.005	µg/L	0.5	0	120	46 - 165%		PASS	
Benzo[e]pyrene	Total	0.406	1	0.001	0.005	µg/L	0.5	0	81	42 - 152%		PASS	
Benzo[g,h,i]perylene	Total	0.398	1	0.001	0.005	µg/L	0.5	0	80	63 - 133%		PASS	
Benzo[k]fluoranthene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	56 - 145%		PASS	
Biphenyl	Total	0.445	1	0.001	0.005	µg/L	0.5	0	89	56 - 119%		PASS	
Chrysene	Total	0.526	1	0.001	0.005	µg/L	0.5	0	105	56 - 141%		PASS	
Dibenz[a,h]anthracene	Total	0.521	1	0.001	0.005	µg/L	0.5	0	104	55 - 150%		PASS	
Dibenzo[a,l]pyrene	Total	0.297	1	0.001	0.005	µg/L	0.5	0	59	50 - 150%		PASS	
Dibenzothiophene	Total	0.493	1	0.001	0.005	µg/L	0.5	0	99	46 - 126%		PASS	

PHYSIS Project ID: 1407003-513
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-96896-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Fluoranthene	Total	0.518	1	0.001	0.005	µg/L	0.5	0	104	60 - 146%	PASS			
Fluorene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.486	1	0.001	0.005	µg/L	0.5	0	97	50 - 151%	PASS			
Naphthalene	Total	0.408	1	0.001	0.005	µg/L	0.5	0	82	41 - 126%	PASS			
Perylene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	48 - 141%	PASS			
Phenanthrene	Total	0.482	1	0.001	0.005	µg/L	0.5	0	96	67 - 127%	PASS			
Pyrene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	
Sample ID: 118222-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**				**Received:**			
		Method: EPA 625.1				Batch ID: O-45088			Prepared: 27-May-24			Analyzed: 22-Jun-24		
(d10-Acenaphthene)	Total	83	1			% Recovery	100	0	83	27 - 133%	PASS	7	30	PASS
(d10-Phenanthrene)	Total	96	1			% Recovery	100	0	96	43 - 129%	PASS	4	30	PASS
(d12-Chrysene)	Total	74	1			% Recovery	100	0	74	52 - 144%	PASS	3	30	PASS
(d12-Perylene)	Total	84	1			% Recovery	100	0	84	36 - 161%	PASS	4	30	PASS
(d8-Naphthalene)	Total	76	1			% Recovery	100	0	76	25 - 125%	PASS	10	30	PASS
1-Methylnaphthalene	Total	0.411	1	0.001	0.005	µg/L	0.5	0	82	31 - 128%	PASS	6	30	PASS
1-Methylphenanthrene	Total	0.464	1	0.001	0.005	µg/L	0.5	0	93	66 - 127%	PASS	7	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	55 - 122%	PASS	5	30	PASS
2,6-Dimethylnaphthalene	Total	0.422	1	0.001	0.005	µg/L	0.5	0	84	48 - 120%	PASS	8	30	PASS
2-Methylnaphthalene	Total	0.404	1	0.001	0.005	µg/L	0.5	0	81	47 - 130%	PASS	5	30	PASS
Acenaphthene	Total	0.414	1	0.001	0.005	µg/L	0.5	0	83	53 - 131%	PASS	8	30	PASS
Acenaphthylene	Total	0.419	1	0.001	0.005	µg/L	0.5	0	84	43 - 140%	PASS	7	30	PASS
Anthracene	Total	0.43	1	0.001	0.005	µg/L	0.5	0	86	58 - 135%	PASS	6	30	PASS
Benz[a]anthracene	Total	0.586	1	0.001	0.005	µg/L	0.5	0	117	55 - 145%	PASS	5	30	PASS
Benzo[a]pyrene	Total	0.416	1	0.001	0.005	µg/L	0.5	0	83	51 - 143%	PASS	2	30	PASS
Benzo[b]fluoranthene	Total	0.563	1	0.001	0.005	µg/L	0.5	0	113	46 - 165%	PASS	6	30	PASS
Benzo[e]pyrene	Total	0.403	1	0.001	0.005	µg/L	0.5	0	81	42 - 152%	PASS	0	30	PASS
Benzo[g,h,i]perylene	Total	0.436	1	0.001	0.005	µg/L	0.5	0	87	63 - 133%	PASS	8	30	PASS
Benzo[k]fluoranthene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	56 - 145%	PASS	7	30	PASS
Biphenyl	Total	0.418	1	0.001	0.005	µg/L	0.5	0	84	56 - 119%	PASS	6	30	PASS
Chrysene	Total	0.503	1	0.001	0.005	µg/L	0.5	0	101	56 - 141%	PASS	4	30	PASS
Dibenz[a,h]anthracene	Total	0.521	1	0.001	0.005	µg/L	0.5	0	104	55 - 150%	PASS	0	30	PASS
Dibenzo[a,l]pyrene	Total	0.264	1	0.001	0.005	µg/L	0.5	0	53	50 - 150%	PASS	11	30	PASS
Dibenzothiophene	Total	0.477	1	0.001	0.005	µg/L	0.5	0	95	46 - 126%	PASS	4	30	PASS

PHYSIS Project ID: 1407003-513
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-96896-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Fluoranthene	Total	0.496	1	0.001	0.005	µg/L	0.5	0	99	60 - 146%	PASS	5	30	PASS	
Fluorene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	58 - 131%	PASS	6	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.475	1	0.001	0.005	µg/L	0.5	0	95	50 - 151%	PASS	2	30	PASS	
Naphthalene	Total	0.384	1	0.001	0.005	µg/L	0.5	0	77	41 - 126%	PASS	6	30	PASS	
Perylene	Total	0.429	1	0.001	0.005	µg/L	0.5	0	86	48 - 141%	PASS	2	30	PASS	
Phenanthrene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	67 - 127%	PASS	4	30	PASS	
Pyrene	Total	0.479	1	0.001	0.005	µg/L	0.5	0	96	54 - 156%	PASS	4	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 118223

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3660	2.9462	1111	Anthracene-D10-	1719-06-8	94
62.9651	1.1905	449	Tetracosane	646-31-1	95
10.6220	1.0184	384	Cyclopropane, 2-bromo-1,1,3-trimethyl-	36617-00-2	88
10.2664	0.7799	294	Hydroperoxide, 1-ethylbutyl	24254-56-6	82
10.9672	0.4745	179	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	85
10.3906	0.4086	154	2-Methylbutanoic anhydride	1468-39-9	87
10.9672	0.3282	124	3,3-Diethoxy-1-propyne	10160-87-9	89
27.4495	0.2900	109	Diethyl Phthalate	84-66-2	97

Concentration estimated using the response for Anthracene-d10

Sample ID: 118224

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3674	2.4477	1111	Anthracene-D10	1517-22-2	93
55.3252	0.3742	170	Benzyl butyl phthalate	85-68-7	95
61.4587	0.2572	117	Bis(2-ethylhexyl) phthalate	117-81-7	97
27.4349	3.7605	1707	Diethyl Phthalate	84-66-2	99
62.9603	2.4556	1115	Heptacosane	593-49-7	95
10.2666	0.4888	222	Hydroperoxide, 1-ethylbutyl	24254-56-6	82
10.6224	0.6041	274	Oxalic acid, cyclohexyl ethyl ester	1000309-30-2	89

Concentration estimated using the response for Anthracene-d10

Sample ID: 118225

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3616	2.6171	1111	Anthracene-D10-	1719-06-8	96
62.9620	2.3193	985	Octacosane	630-02-4	96
10.6226	0.8077	343	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	89
10.2672	0.6392	271	Hydroperoxide, 1-ethylbutyl	24254-56-6	84
10.3907	0.3496	148	Hydroperoxide, 1-methylpentyl	24254-55-5	86
10.9680	0.3485	148	3,3-Diethoxy-1-propyne	10160-87-9	88

Concentration estimated using the response for Anthracene-d10

Sample ID: 118226

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3568	2.0104	1111	Anthracene-D10-	1719-06-8	94
62.9548	2.1614	1195	Tetracosane	646-31-1	96
55.3173	0.6786	375	Benzyl butyl phthalate	85-68-7	93
10.6215	0.5461	302	3,3-Diethoxy-1-propyne	10160-87-9	89
10.2649	0.4255	235	Hydroperoxide, 1-ethylbutyl	24254-56-6	83
27.4484	0.2878	159	Diethyl Phthalate	84-66-2	98
32.0734	0.2773	153	Benzoic acid, 2-ethylhexyl ester	5444-75-7	96
11.0083	0.2655	147	1H-1,2,4-Triazole, 3-methyl-	1924835	81
11.0083	0.2640	146	1-Methyl-1H-1,2,4-triazole	6086-21-1	82
10.3901	0.2318	128	Hydroperoxide, 1-methylpentyl	24254-55-5	86

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_45088

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.9319	3.1833	1111	Anthracene-D10-	1517-22-2	96
10.6225	0.8901	311	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	88
10.2672	0.6459	225	Hydroperoxide, 1-ethylbutyl	24254-56-6	81
10.9673	0.5201	182	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	91

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

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7/1/2024

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-127136.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-96896-1
Address: 1904 Wright Circle, ,	Due Date Requested: 6/11/2024			Preservation Codes: -
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			Other:

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MOANALUA WELLS (380-96896-1)	5/20/24	10:09 Hawaiian		Water			X	2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (380-96896-2)	5/20/24	11:01 Hawaiian		Water			X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) P2 (380-96896-3)	5/20/24	11:27 Hawaiian		Water			X	2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 P1 (380-96896-4)	5/20/24	10:35 Hawaiian		Water			X	2	See Attached Instructions

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.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ 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:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/23/24 1144	EEA	Mounge NDM	5/23/24 1144	PHYSIS
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:

Ver: 04/02/2024

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Sample Receipt Summary

PHYSIS ENVIRONMENTAL LABORATORIES, INC. Innovative Solutions for Nature

Project Iteration ID: 1407003-513
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111
Job # 380-96896-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Receiving Info

1. Initials Received By: MN
2. Date Received: 5/23/24
3. Time Received: 1144
4. Client Name: Eurofins
5. Courier Information: (Please circle)
   - Client
   - UPS
   - Area Fast
   - DRS
   - FedEx
   - GSO/GLS
   - Ontrac
   - PAMS
   - PHYSIS Driver:
     i. Start Time:_____ iii. Total Mileage:_____
     ii. End Time:_____ 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): 1.6 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

Refer to J 98902 for these sites' 525.2 & PFAS samples

eurofins

Client Information	Sampler: Bailey	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27984-2757 2
Client Contact: Dr Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID:	Analysis Requested		Job #:
Address: 630 South Beretania Street, Chemistry Lab	Due Date Requested:			Preservation Codes: A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N None; O AsNaO2; P - Na2O4S; Q Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V MCAA; W pH 4-5; Y - Trizma; Z - other (specify); Other:
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8 C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note
			Preservation Code:				R	A	Q		Y	N		
MOANALUA WELLS	20-May-2024	1009	G	Water			2	4	2	2				chlorinated
AIEA GULCH WELLS PUMP2	20-May-2024	1101	G	Water			2	4	2	2				chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	20-May-2024	1127	G	Water			2	4	2	2				
HALAWA WELLS UNITS 1&2 P1	20-May-2024	1035	G	Water			2	4	2	2				
TB MOANALUA WELLS	20-May-2024	1009		Water				2						
TB AIEA GULCH WELLS PUMP2	20-May-2024	1101		Water				2						
TB AIEA WELLS PUMPS 1&2 (260)	20-May-2024	1127		Water				2						
TB HALAWA WELLS UNITS 1&2	20-May-2024	1035		Water				2						

380-96896 COC

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify)	Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment: FED EX (1) 7764 9156 5938 (2) 7764 9156 5949

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Bailey	21May2024 1400	HBWS	G. REITNER	05/22/2024 10:34	EEAP
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
		7578 (1) 1.4°-0.1°=1.3° (2) 0.8°-0.1°=0.7° GR GEL-FROZEN

Ver: 01/16/2019

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

Chain of Custody Record

eurofins | E

Loc: 380
96896

Client Information (Sub Contract Lab)	Sampler	Lab PM. Arada, Rachelle	Carrier Tracking No(s).	COC No: 380-127127 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.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 #: 380-96896-1
Address: 2841 Dow Avenue, Suite 100,	Due Date Requested: 6/12/2024			Preservation Codes.
City: Tustin	TAT Requested (days).			
State, Zip: CA, 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			Other

Analysis Requested

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO_LL_C8/3510C_LL HNL Ranges. C10-C24/C24-C36/C8-C18	8015B_GRO_LL/5030C (MOD) GRO	8015B_GRO_LL/5030C GRO	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MOANALUA WELLS (380-96896-1)	5/20/24	10:09 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA GULCH WELLS PUMP 2 (380-96896-2)	5/20/24	11:01 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml) MRLs are needed
AIEA WELLS PUMPS 1&2 (260) P2 (380-96896-3)	5/20/24	11:27 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
HALAWA WELLS UNITS 1 & 2 P1 (380-96896-4)	5/20/24	10:35 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
TB MCANALUA WELLS (380-96896-5)	5/20/24	10:09 Hawaiian		Water					X	2	MRLs are needed.
TB AIEA GULCH WELLS PUMP 2 (380-96896-6)	5/20/24	11:01 Hawaiian		Water					X	2	MRLs are needed
TB AIEA WELLS PUMPS 1&2 (260) P2 (380-96896-7)	5/20/24	11:27 Hawaiian		Water					X	2	MRLs are needed
TB HALAWA WELLS UNITS 1 & 2 P1 (380-96896-8)	5/20/24	10:35 Hawaiian		Water					X	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.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ 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	Date/Time:	Company	Received by	Date/Time:	Company
1		5/23/24 1210	EEA		5-23-24 1210	EC
2						
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: 1.5/1.6 SC14

380-96896 Chain of Custody

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone. 626-386-1100

Chain of Custody Record

eurofins | E

Loc: 380
96896

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-127127 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.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 #: 380-96896-1
Address: 2841 Dow Avenue, Suite 100, ,	Due Date Requested: 6/12/2024	Analysis Requested		Preservation Codes: -
City: Tustin	TAT Requested (days):			
State, Zip: CA, 92780				
Phone: 714-895-5494(Tel)	PO #:			Other:
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO_LL_CS/3510C_LL_HNL Ranges C10-C24/C24-C36/C8-C18	8015B_GRO_LL/5030C (MOD) GRO	8015B_GRO_LL/5030C GRO	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MOANALUA WELLS (380-96896-1)	5/20/24	10:09 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA GULCH WELLS PUMP 2 (380-96896-2)	5/20/24	11:01 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA WELLS PUMPS 1&2 (260) P2 (380-96896-3)	5/20/24	11:27 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml) MRLs are needed.
HALAWA WELLS UNITS 1 & 2 P1 (380-96896-4)	5/20/24	10:35 Hawaiian		Water			X	X		6	initial volume (500ml) and final volume (2ml). MRLs are needed.
TB MOANALUA WELLS (380-96896-5)	5/20/24	10:09 Hawaiian		Water					X	2	MRLs are needed.
TB AIEA GULCH WELLS PUMP 2 (380-96896-6)	5/20/24	11:01 Hawaiian		Water					X	2	MRLs are needed
TB AIEA WELLS PUMPS 1&2 (260) P2 (380-96896-7)	5/20/24	11:27 Hawaiian		Water					X	2	MRLs are needed
TB HALAWA WELLS UNITS 1 & 2 P1 (380-96896-8)	5/20/24	10:35 Hawaiian		Water					X	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.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ 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:	Date/Time:	Company	Received by:	Date/Time:	Company
	5/23/24 1210	EESA		5-23-24 1210	EC
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.
		1.5/1.6 ≤ 14

380-96896 Chain of Custody

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-96896-1
SDG Number: 625, 8015

Login Number: 96896
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: 380-96896-1
SDG Number: 625, 8015

Login Number: 96896
List Number: 2
Creator: Arellano, Cyndy

List Source: Eurofins Calscience
List Creation: 05/23/24 01:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	False	Not Present
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	1.6
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

RED-HILL
525.2, 533, 537.1

JOB NUMBER

380-96902-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

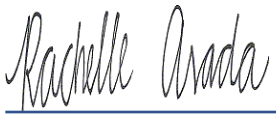
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

LCMS

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 380-96902-1 — Eurofins Eaton Analytical Pomona

Job Narrative
380-96902-1

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 5/22/2024 10:34 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 0.7°C and 1.3°C.

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

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

Detection Summary

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-96902-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-96902-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-96902-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1&2 P1 — Lab Sample ID: 380-96902-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: FB: MOANALUA WELLS — Lab Sample ID: 380-96902-5

No Detections.

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-96902-6

No Detections.

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-96902-7

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1 — Lab Sample ID: 380-96902-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MOANALUA WELLS

Date Collected: 05/20/24 10:09
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-1

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
2,4'-DDD	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
2,4'-DDE	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
2,4'-DDT	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
2-Methylnaphthalene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
4,4'-DDD	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
4,4'-DDE	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
4,4'-DDT	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Acenaphthene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Acenaphthylene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Acetochlor	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Alachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
alpha-BHC	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
alpha-Chlordane	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Anthracene	<0.019	F1	0.019		ug/L		05/29/24 09:15	05/30/24 13:09	1
Atrazine	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Benz(a)anthracene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Benzo[a]pyrene	<0.019		0.019		ug/L		05/29/24 09:15	05/30/24 13:09	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		05/29/24 09:15	05/30/24 13:09	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		05/29/24 09:15	05/30/24 13:09	1
beta-BHC	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		05/29/24 09:15	05/30/24 13:09	1
Bromacil	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Butachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Butylbenzylphthalate	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:09	1
Chlorobenzilate	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Chloroneb	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Chlorpyrifos	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Chrysene	<0.019		0.019		ug/L		05/29/24 09:15	05/30/24 13:09	1
delta-BHC	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		05/29/24 09:15	05/30/24 13:09	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Dieldrin	<0.19		0.19		ug/L		05/29/24 09:15	05/30/24 13:09	1
Diethylphthalate	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:09	1
Dimethylphthalate	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:09	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		05/29/24 09:15	05/30/24 13:09	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Endosulfan sulfate	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Endrin	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Endrin aldehyde	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
EPTC	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Fluoranthene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 05/20/24 10:09
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
gamma-Chlordane	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Heptachlor	<0.039		0.039		ug/L		05/29/24 09:15	05/30/24 13:09	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Hexachlorobenzene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Isophorone	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:09	1
Lindane	<0.039		0.039		ug/L		05/29/24 09:15	05/30/24 13:09	1
Malathion	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Methoxychlor	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Metolachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Molinate	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Naphthalene	<0.29		0.29		ug/L		05/29/24 09:15	05/30/24 13:09	1
Parathion	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Phenanthrene	<0.039		0.039		ug/L		05/29/24 09:15	05/30/24 13:09	1
Propachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Pyrene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Simazine	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Terbacil	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Terbuthylazine	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1
Thiobencarb	<0.19		0.19		ug/L		05/29/24 09:15	05/30/24 13:09	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		05/29/24 09:15	05/30/24 13:09	1
trans-Nonachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:09	1
Trifluralin	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/29/24 09:15*	*05/30/24 13:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*98*		*70 - 130*	*05/29/24 09:15*	*05/30/24 13:09*	*1*
Perylene-d12	*92*		*70 - 130*	*05/29/24 09:15*	*05/30/24 13:09*	*1*
Triphenylphosphate	*106*		*70 - 130*	*05/29/24 09:15*	*05/30/24 13:09*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 05/20/24 10:09
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 15:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*72*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C6 PFDA	*72*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C5 PFHxA	*80*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C4 PFHpA	*82*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C8 PFOA	*84*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C9 PFNA	*78*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C7 PFUnA	*68*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C2 PFDoA	*71*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C4 PFBA	*88*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C5 PFPeA	*93*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C3 PFBS	*96*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C3 PFHxS	*99*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C8 PFOS	*98*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C2-4:2-FTS	*120*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C2-6:2-FTS	*111*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*1*
13C2-8:2-FTS	*86*		*50 - 200*	*05/23/24 10:26*	*05/24/24 15:50*	*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		05/23/24 10:15	05/24/24 20:16	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1

Client Sample ID: MOANALUA WELLS

Date Collected: 05/20/24 10:09
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-1

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*101*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:16*	*1*
13C2 PFHxA	*106*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:16*	*1*
13C2 PFDA	*109*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:16*	*1*
13C3-GenX	*96*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:16*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 05/20/24 11:01
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
2,4'-DDD	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
2,4'-DDE	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
2,4'-DDT	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
2-Methylnaphthalene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
4,4'-DDD	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
4,4'-DDE	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
4,4'-DDT	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Acenaphthene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Acenaphthylene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Acetochlor	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Alachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
alpha-BHC	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
alpha-Chlordane	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Anthracene	<0.019		0.019		ug/L		05/29/24 09:15	05/30/24 13:29	1
Atrazine	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Benz(a)anthracene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Benzo[a]pyrene	<0.019		0.019		ug/L		05/29/24 09:15	05/30/24 13:29	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		05/29/24 09:15	05/30/24 13:29	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 05/20/24 11:01
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.019		0.019		ug/L		05/29/24 09:15	05/30/24 13:29	1
beta-BHC	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		05/29/24 09:15	05/30/24 13:29	1
Bromacil	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Butachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Butylbenzylphthalate	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:29	1
Chlorobenzilate	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Chloroneb	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Chlorpyrifos	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Chrysene	<0.019		0.019		ug/L		05/29/24 09:15	05/30/24 13:29	1
delta-BHC	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		05/29/24 09:15	05/30/24 13:29	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Dieldrin	<0.19		0.19		ug/L		05/29/24 09:15	05/30/24 13:29	1
Diethylphthalate	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:29	1
Dimethylphthalate	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:29	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		05/29/24 09:15	05/30/24 13:29	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Endosulfan sulfate	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Endrin	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Endrin aldehyde	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
EPTC	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Fluoranthene	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Fluorene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
gamma-Chlordane	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Heptachlor	<0.039		0.039		ug/L		05/29/24 09:15	05/30/24 13:29	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Hexachlorobenzene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Isophorone	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:29	1
Lindane	<0.039		0.039		ug/L		05/29/24 09:15	05/30/24 13:29	1
Malathion	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Methoxychlor	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Metolachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Molinate	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Naphthalene	<0.29		0.29		ug/L		05/29/24 09:15	05/30/24 13:29	1
Parathion	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Phenanthrene	<0.039		0.039		ug/L		05/29/24 09:15	05/30/24 13:29	1
Propachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Pyrene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Simazine	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Terbacil	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1
Terbuthylazine	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 05/20/24 11:01
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.19		0.19		ug/L		05/29/24 09:15	05/30/24 13:29	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		05/29/24 09:15	05/30/24 13:29	1
trans-Nonachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:29	1
Trifluralin	<0.097		0.097		ug/L		05/29/24 09:15	05/30/24 13:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/29/24 09:15*	*05/30/24 13:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*98*		*70 - 130*	*05/29/24 09:15*	*05/30/24 13:29*	*1*
Perylene-d12	*96*		*70 - 130*	*05/29/24 09:15*	*05/30/24 13:29*	*1*
Triphenylphosphate	*109*		*70 - 130*	*05/29/24 09:15*	*05/30/24 13:29*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:00	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 05/20/24 11:01
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-2

Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	66		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C6 PFDA	57		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C5 PFHxA	73		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C4 PFHpA	75		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C8 PFOA	70		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C9 PFNA	60		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C7 PFUnA	60		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C2 PFDoA	67		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C4 PFBA	81		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C5 PFPeA	82		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C3 PFBS	103		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C3 PFHxS	106		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C8 PFOS	100		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C2-4:2-FTS	126		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C2-6:2-FTS	109		50 - 200	05/23/24 10:26	05/24/24 16:00	1
13C2-8:2-FTS	88		50 - 200	05/23/24 10:26	05/24/24 16:00	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		05/23/24 10:15	05/24/24 20:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130	05/23/24 10:15	05/24/24 20:25	1
13C2 PFHxA	109		70 - 130	05/23/24 10:15	05/24/24 20:25	1
13C2 PFDA	110		70 - 130	05/23/24 10:15	05/24/24 20:25	1
13C3-GenX	103		70 - 130	05/23/24 10:15	05/24/24 20:25	1

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

Date Collected: 05/20/24 11:27
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-3

Matrix: Water

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		05/29/24 09:15	05/30/24 13:49	1
2,4'-DDD	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
2,4'-DDE	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
2,4'-DDT	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
2-Methylnaphthalene	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
4,4'-DDD	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
4,4'-DDE	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
4,4'-DDT	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Acenaphthene	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Acenaphthylene	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Acetochlor	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Alachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
alpha-BHC	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
alpha-Chlordane	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Anthracene	<0.020		0.020		ug/L		05/29/24 09:15	05/30/24 13:49	1
Atrazine	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Benz(a)anthracene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Benzo[a]pyrene	<0.020		0.020		ug/L		05/29/24 09:15	05/30/24 13:49	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		05/29/24 09:15	05/30/24 13:49	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		05/29/24 09:15	05/30/24 13:49	1
beta-BHC	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		05/29/24 09:15	05/30/24 13:49	1
Bromacil	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Butachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Butylbenzylphthalate	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:49	1
Chlorobenzilate	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Chloroneb	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Chlorpyrifos	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Chrysene	<0.020		0.020		ug/L		05/29/24 09:15	05/30/24 13:49	1
delta-BHC	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		05/29/24 09:15	05/30/24 13:49	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Dieldrin	<0.20		0.20		ug/L		05/29/24 09:15	05/30/24 13:49	1
Diethylphthalate	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:49	1
Dimethylphthalate	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:49	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		05/29/24 09:15	05/30/24 13:49	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Endosulfan sulfate	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Endrin	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Endrin aldehyde	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
EPTC	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Fluoranthene	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/20/24 11:27
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
gamma-Chlordane	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Heptachlor	<0.039		0.039		ug/L		05/29/24 09:15	05/30/24 13:49	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Hexachlorobenzene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Isophorone	<0.49		0.49		ug/L		05/29/24 09:15	05/30/24 13:49	1
Lindane	<0.039		0.039		ug/L		05/29/24 09:15	05/30/24 13:49	1
Malathion	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Methoxychlor	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Metolachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Molinate	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Naphthalene	<0.29		0.29		ug/L		05/29/24 09:15	05/30/24 13:49	1
Parathion	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Phenanthrene	<0.039		0.039		ug/L		05/29/24 09:15	05/30/24 13:49	1
Propachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Pyrene	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Simazine	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Terbacil	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Terbuthylazine	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1
Thiobencarb	<0.20		0.20		ug/L		05/29/24 09:15	05/30/24 13:49	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		05/29/24 09:15	05/30/24 13:49	1
trans-Nonachlor	<0.049		0.049		ug/L		05/29/24 09:15	05/30/24 13:49	1
Trifluralin	<0.098		0.098		ug/L		05/29/24 09:15	05/30/24 13:49	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/29/24 09:15*	*05/30/24 13:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*96*		*70 - 130*	*05/29/24 09:15*	*05/30/24 13:49*	*1*
Perylene-d12	*90*		*70 - 130*	*05/29/24 09:15*	*05/30/24 13:49*	*1*
Triphenylphosphate	*96*		*70 - 130*	*05/29/24 09:15*	*05/30/24 13:49*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/20/24 11:27
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*94*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C6 PFDA	*97*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C5 PFHxA	*95*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C4 PFHpA	*104*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C8 PFOA	*104*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C9 PFNA	*104*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C7 PFUnA	*88*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C2 PFDoA	*86*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C4 PFBA	*101*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C5 PFPeA	*106*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C3 PFBS	*102*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C3 PFHxS	*105*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C8 PFOS	*101*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C2-4:2-FTS	*122*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C2-6:2-FTS	*103*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*1*
13C2-8:2-FTS	*86*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:10*	*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		05/23/24 10:15	05/24/24 20:35	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1

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

Lab Sample ID: 380-96902-3

Date Collected: 05/20/24 11:27
Matrix: Water
Date Received: 05/22/24 10:34

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*100*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:35*	*1*
13C2 PFHxA	*112*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:35*	*1*
13C2 PFDA	*105*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:35*	*1*
13C3-GenX	*99*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:35*	*1*

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-96902-4

Date Collected: 05/20/24 10:35
Matrix: Water
Date Received: 05/22/24 10:34

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorooctanesulfonic acid (PFOS)	**2.1**		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorohexanesulfonic acid (PFHxS)	**2.3**		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 20:45	1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-96902-4

Date Collected: 05/20/24 10:35
Date Received: 05/22/24 10:34

Matrix: Water

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		05/23/24 10:15	05/24/24 20:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*98*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:45*	*1*
13C2 PFHxA	*111*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:45*	*1*
13C2 PFDA	*108*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:45*	*1*
13C3-GenX	*101*		*70 - 130*	*05/23/24 10:15*	*05/24/24 20:45*	*1*

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-96902-5

Date Collected: 05/20/24 10:09
Date Received: 05/22/24 10:34

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:29	1

Client Sample ID: FB: MOANALUA WELLS

Date Collected: 05/20/24 10:09
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-5

Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*102*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C6 PFDA	*101*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C5 PFHxA	*103*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C4 PFHpA	*108*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C8 PFOA	*109*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C9 PFNA	*107*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C7 PFUnA	*94*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C2 PFDoA	*93*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C4 PFBA	*103*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C5 PFPeA	*108*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C3 PFBS	*105*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C3 PFHxS	*108*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C8 PFOS	*105*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C2-4:2-FTS	*123*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C2-6:2-FTS	*105*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*1*
13C2-8:2-FTS	*93*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:29*	*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		05/23/24 10:15	05/24/24 21:06	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*102*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:06*	*1*
13C2 PFHxA	*108*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:06*	*1*
13C2 PFDA	*111*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:06*	*1*
13C3-GenX	*98*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:06*	*1*

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2
Date Collected: 05/20/24 11:01
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-6
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:38	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*96*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C6 PFDA	*97*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C5 PFHxA	*100*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C4 PFHpA	*105*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C8 PFOA	*101*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C9 PFNA	*101*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C7 PFUnA	*85*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C2 PFDoA	*90*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C4 PFBA	*100*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C5 PFPeA	*100*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C3 PFBS	*107*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C3 PFHxS	*109*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C8 PFOS	*104*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-96902-6
Matrix: Water
Date Collected: 05/20/24 11:01
Date Received: 05/22/24 10:34

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	*120*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C2-6:2-FTS	*104*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*1*
13C2-8:2-FTS	*90*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:38*	*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		05/23/24 10:15	05/24/24 21:17	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/23/24 10:15	05/24/24 21:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*106*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:17*	*1*
13C2 PFHxA	*110*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:17*	*1*
13C2 PFDA	*106*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:17*	*1*
13C3-GenX	*100*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:17*	*1*

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

Lab Sample ID: 380-96902-7
Matrix: Water
Date Collected: 05/20/24 11:27
Date Received: 05/22/24 10:34

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/23/24 10:26	05/24/24 16:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/23/24 10:26	05/24/24 16:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/23/24 10:26	05/24/24 16:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/23/24 10:26	05/24/24 16:48	1

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 05/20/24 11:27
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-7
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/23/24 10:26	05/24/24 16:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*99*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C6 PFDA	*101*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C5 PFHxA	*101*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C4 PFHpA	*106*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C8 PFOA	*107*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C9 PFNA	*104*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C7 PFUnA	*93*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C2 PFDoA	*91*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C4 PFBA	*102*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C5 PFPeA	*102*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C3 PFBS	*103*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C3 PFHxS	*105*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C8 PFOS	*103*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C2-4:2-FTS	*121*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C2-6:2-FTS	*108*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*1*
13C2-8:2-FTS	*87*		*50 - 200*	*05/23/24 10:26*	*05/24/24 16:48*	*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		05/23/24 10:15	05/24/24 21:26	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-96902-7

Date Collected: 05/20/24 11:27
Date Received: 05/22/24 10:34

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*110*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:26*	*1*
13C2 PFHxA	*109*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:26*	*1*
13C2 PFDA	*106*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:26*	*1*
13C3-GenX	*103*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:26*	*1*

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

Lab Sample ID: 380-96902-8

Date Collected: 05/20/24 10:35
Date Received: 05/22/24 10:34

Matrix: Water

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		05/23/24 10:15	05/24/24 21:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1
Date Collected: 05/20/24 10:35
Date Received: 05/22/24 10:34

Lab Sample ID: 380-96902-8
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/23/24 10:15	05/24/24 21:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*106*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:36*	*1*
13C2 PFHxA	*106*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:36*	*1*
13C2 PFDA	*108*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:36*	*1*
13C3-GenX	*101*		*70 - 130*	*05/23/24 10:15*	*05/24/24 21:36*	*1*

Action Limit Summary

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-96902-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-96902-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2 (Continued) — Lab Sample ID: 380-96902-2

Compliance Check

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

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

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-96902-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	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	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Action Limit Summary

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1 — Lab Sample ID: 380-96902-4

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB: MOANALUA WELLS — Lab Sample ID: 380-96902-5

Compliance Check

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

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

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-96902-6

Compliance Check

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

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

Action Limit Summary

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-96902-7

Compliance Check

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

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

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1 — Lab Sample ID: 380-96902-8

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-96902-1	MOANALUA WELLS	98	92	106
380-96902-1 MS	MOANALUA WELLS	97	96	114
380-96902-2	AIEA GULCH WELLS PUMP 2	98	96	109
380-96902-2 DU	AIEA GULCH WELLS PUMP 2	101	95	113
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	96	90	96
LCS 380-92588/23-A	Lab Control Sample	95	97	113
LCSD 380-92588/24-A	Lab Control Sample Dup	94	97	111
MB 380-92588/21-A	Method Blank	97	97	109
MRL 380-92588/22-A	Lab Control Sample	96	98	108

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-96888-A-1-B MS	Matrix Spike	97	103	100	94
380-96888-A-1-C MSD	Matrix Spike Duplicate	100	104	103	100
380-96902-1	MOANALUA WELLS	101	106	109	96
380-96902-2	AIEA GULCH WELLS PUMP 2	104	109	110	103
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	100	112	105	99
380-96902-4	HALAWA WELLS UNITS 1&2 P1	98	111	108	101
380-96902-5	FB: MOANALUA WELLS	102	108	111	98
380-96902-6	FB: AIEA GULCH WELLS PUMP 2	106	110	106	100
380-96902-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	110	109	106	103
380-96902-8	FB: HALAWA WELLS UNITS 1&2 P1	106	106	108	101
LCS 380-91928/23-A	Lab Control Sample	103	104	104	101
MBL 380-91928/21-A	Method Blank	103	107	100	97
MRL 380-91928/22-A	Lab Control Sample	94	100	97	87

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: 380-96902-1
SDG: 525.2, 533, 537.1

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	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-96888-D-1-B MS	Matrix Spike	88	99	89	95	99	102	93	94
380-96888-D-1-C MSD	Matrix Spike Duplicate	81	92	80	83	87	91	83	89
380-96902-1	MOANALUA WELLS	72	72	80	82	84	78	68	71
380-96902-2	AIEA GULCH WELLS PUMP 2	66	57	73	75	70	60	60	67
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	94	97	95	104	104	104	88	86
380-96902-5	FB: MOANALUA WELLS	102	101	103	108	109	107	94	93
380-96902-6	FB: AIEA GULCH WELLS PUMP 2	96	97	100	105	101	101	85	90
380-96902-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	99	101	101	106	107	104	93	91
LCS 380-91953/24-A	Lab Control Sample	95	104	98	101	106	107	96	97
MBL 380-91953/22-A	Method Blank	88	97	95	101	102	102	88	89
MRL 380-91953/23-A	Lab Control Sample	89	98	96	104	103	101	91	89

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-96888-D-1-B MS	Matrix Spike	92	105	108	112	108	116	105	98
380-96888-D-1-C MSD	Matrix Spike Duplicate	84	93	99	106	100	112	102	94
380-96902-1	MOANALUA WELLS	88	93	96	99	98	120	111	86
380-96902-2	AIEA GULCH WELLS PUMP 2	81	82	103	106	100	126	109	88
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	101	106	102	105	101	122	103	86
380-96902-5	FB: MOANALUA WELLS	103	108	105	108	105	123	105	93
380-96902-6	FB: AIEA GULCH WELLS PUMP 2	100	100	107	109	104	120	104	90
380-96902-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	102	102	103	105	103	121	108	87
LCS 380-91953/24-A	Lab Control Sample	102	104	109	106	106	114	105	93
MBL 380-91953/22-A	Method Blank	96	103	102	104	99	115	99	86
MRL 380-91953/23-A	Lab Control Sample	102	101	103	103	101	118	100	87

Surrogate Legend

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

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

Lab Sample ID: MB 380-92588/21-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 92588

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
2,4'-DDD	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
2,4'-DDE	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
2,4'-DDT	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
2-Methylnaphthalene	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
4,4'-DDD	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
4,4'-DDE	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
4,4'-DDT	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Acenaphthene	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Acenaphthylene	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Acetochlor	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Alachlor	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
alpha-BHC	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
alpha-Chlordane	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Anthracene	<0.020		0.020		ug/L		05/29/24 10:30	05/30/24 12:29	1
Atrazine	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Benz(a)anthracene	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Benzo[a]pyrene	<0.020		0.020		ug/L		05/29/24 10:30	05/30/24 12:29	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		05/29/24 10:30	05/30/24 12:29	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		05/29/24 10:30	05/30/24 12:29	1
beta-BHC	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		05/29/24 10:30	05/30/24 12:29	1
Bromacil	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Butachlor	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Butylbenzylphthalate	<0.50		0.50		ug/L		05/29/24 10:30	05/30/24 12:29	1
Chlorobenzilate	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Chloroneb	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Chlorpyrifos	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Chrysene	<0.020		0.020		ug/L		05/29/24 10:30	05/30/24 12:29	1
delta-BHC	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		05/29/24 10:30	05/30/24 12:29	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Dieldrin	<0.20		0.20		ug/L		05/29/24 10:30	05/30/24 12:29	1
Diethylphthalate	<0.50		0.50		ug/L		05/29/24 10:30	05/30/24 12:29	1
Dimethylphthalate	<0.50		0.50		ug/L		05/29/24 10:30	05/30/24 12:29	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		05/29/24 10:30	05/30/24 12:29	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Endosulfan sulfate	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Endrin	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Endrin aldehyde	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
EPTC	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1

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

Lab Sample ID: MB 380-92588/21-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 92588

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Fluorene	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
gamma-Chlordane	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Heptachlor	<0.040		0.040		ug/L		05/29/24 10:30	05/30/24 12:29	1
Heptachlor epoxide (isomer B)	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Hexachlorobenzene	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Isophorone	<0.50		0.50		ug/L		05/29/24 10:30	05/30/24 12:29	1
Lindane	<0.040		0.040		ug/L		05/29/24 10:30	05/30/24 12:29	1
Malathion	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Methoxychlor	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Metolachlor	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Molinate	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Naphthalene	<0.30		0.30		ug/L		05/29/24 10:30	05/30/24 12:29	1
Parathion	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Phenanthrene	<0.040		0.040		ug/L		05/29/24 10:30	05/30/24 12:29	1
Propachlor	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Pyrene	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Simazine	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Terbacil	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Terbuthylazine	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1
Thiobencarb	<0.20		0.20		ug/L		05/29/24 10:30	05/30/24 12:29	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		05/29/24 10:30	05/30/24 12:29	1
trans-Nonachlor	<0.050		0.050		ug/L		05/29/24 10:30	05/30/24 12:29	1
Trifluralin	<0.099		0.099		ug/L		05/29/24 10:30	05/30/24 12:29	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*05/29/24 10:30*	*05/30/24 12:29*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*97*		*70 - 130*	*05/29/24 10:30*	*05/30/24 12:29*	*1*
Perylene-d12	*97*		*70 - 130*	*05/29/24 10:30*	*05/30/24 12:29*	*1*
Triphenylphosphate	*109*		*70 - 130*	*05/29/24 10:30*	*05/30/24 12:29*	*1*

Lab Sample ID: LCS 380-92588/23-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92588

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			1.98	2.01		ug/L		101	70 - 130		
2,4'-DDD			1.98	2.29		ug/L		115	70 - 130		
2,4'-DDE			1.98	2.09		ug/L		105	70 - 130		
2,4'-DDT			1.98	2.37		ug/L		120	70 - 130		
2,4-Dinitrotoluene			1.98	2.12		ug/L		107	70 - 130		
2,6-Dinitrotoluene			1.98	2.10		ug/L		106	70 - 130		
2-Methylnaphthalene			1.98	2.05		ug/L		103	70 - 130		

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

Lab Sample ID: LCS 380-92588/23-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92588

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	1.98	2.29		ug/L		116	70 - 130
4,4'-DDE	1.98	2.24		ug/L		113	70 - 130
4,4'-DDT	1.98	2.14		ug/L		108	70 - 130
Acenaphthene	1.98	1.90		ug/L		96	70 - 130
Acenaphthylene	1.98	2.00		ug/L		101	70 - 130
Acetochlor	1.98	2.11		ug/L		106	70 - 130
Alachlor	1.98	2.11		ug/L		107	70 - 130
alpha-BHC	1.98	1.97		ug/L		99	70 - 130
alpha-Chlordane	1.98	2.16		ug/L		109	70 - 130
Anthracene	1.98	1.60		ug/L		81	70 - 130
Atrazine	1.98	2.34		ug/L		118	70 - 130
Benz(a)anthracene	1.98	2.00		ug/L		101	70 - 130
Benzo[a]pyrene	1.98	1.93		ug/L		97	70 - 130
Benzo[b]fluoranthene	1.98	2.20		ug/L		111	70 - 130
Benzo[g,h,i]perylene	1.98	1.99		ug/L		100	70 - 130
Benzo[k]fluoranthene	1.98	2.18		ug/L		110	70 - 130
beta-BHC	1.98	2.05		ug/L		104	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	2.20		ug/L		111	70 - 130
Bromacil	1.98	2.50		ug/L		126	70 - 130
Butachlor	1.98	2.28		ug/L		115	70 - 130
Butylbenzylphthalate	1.98	2.35		ug/L		119	70 - 130
Chlorobenzilate	1.98	2.06		ug/L		104	70 - 130
Chloroneb	1.98	2.00		ug/L		101	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.28		ug/L		115	70 - 130
Chlorpyrifos	1.98	2.24		ug/L		113	70 - 130
Chrysene	1.98	2.11		ug/L		106	70 - 130
delta-BHC	1.98	1.95		ug/L		98	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.48		ug/L		125	70 - 130
Dibenz(a,h)anthracene	1.98	2.08		ug/L		105	70 - 130
Diclorvos (DDVP)	1.98	2.26		ug/L		114	70 - 130
Dieldrin	1.98	2.00		ug/L		101	70 - 130
Diethylphthalate	1.98	2.12		ug/L		107	70 - 130
Dimethylphthalate	1.98	2.14		ug/L		108	70 - 130
Di-n-butyl phthalate	3.96	4.28		ug/L		108	70 - 130
Di-n-octyl phthalate	1.98	2.09		ug/L		105	70 - 130
Endosulfan I (Alpha)	1.98	1.96		ug/L		99	70 - 130
Endosulfan II (Beta)	1.98	2.07		ug/L		104	70 - 130
Endosulfan sulfate	1.98	2.21		ug/L		112	70 - 130
Endrin	1.98	2.17		ug/L		110	70 - 130
Endrin aldehyde	1.98	1.58		ug/L		80	60 - 130
EPTC	1.98	2.36		ug/L		119	70 - 130
Fluoranthene	1.98	2.17		ug/L		109	70 - 130
Fluorene	1.98	2.11		ug/L		106	70 - 130
gamma-Chlordane	1.98	2.25		ug/L		113	70 - 130
Heptachlor	1.98	2.16		ug/L		109	70 - 130
Heptachlor epoxide (isomer B)	1.98	2.15		ug/L		108	70 - 130
Hexachlorobenzene	1.98	2.03		ug/L		102	70 - 130
Hexachlorocyclopentadiene	1.98	2.00		ug/L		101	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	2.08		ug/L		105	70 - 130

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

Lab Sample ID: LCS 380-92588/23-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92588

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Isophorone			1.98	2.16		ug/L		109	70 - 130		
Lindane			1.98	2.03		ug/L		102	70 - 130		
Malathion			1.98	2.28		ug/L		115	70 - 130		
Methoxychlor			1.98	2.19		ug/L		110	70 - 130		
Metolachlor			1.98	2.19		ug/L		111	70 - 130		
Molinate			1.98	2.18		ug/L		110	70 - 130		
Naphthalene			1.98	1.86		ug/L		94	70 - 130		
Parathion			1.98	2.33		ug/L		118	70 - 130		
Pendimethalin (Penoxaline)			1.98	2.17		ug/L		110	70 - 130		
Phenanthrene			1.98	1.92		ug/L		97	70 - 130		
Propachlor			1.98	2.20		ug/L		111	70 - 130		
Pyrene			1.98	2.20		ug/L		111	70 - 130		
Simazine			1.98	2.30		ug/L		116	70 - 130		
Terbacil			1.98	2.19		ug/L		111	70 - 130		
Terbuthylazine			1.98	2.26		ug/L		114	70 - 130		
Thiobencarb			1.98	2.38		ug/L		120	70 - 130		
trans-Nonachlor			1.98	2.21		ug/L		111	70 - 130		
Trifluralin			1.98	2.07		ug/L		104	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*95*		*70 - 130*
Perylene-d12	*97*		*70 - 130*
Triphenylphosphate	*113*		*70 - 130*

Lab Sample ID: LCSD 380-92588/24-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 92588

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			1.98	1.98		ug/L		100	70 - 130	1	20
2,4'-DDD			1.98	2.19		ug/L		110	70 - 130	5	20
2,4'-DDE			1.98	2.04		ug/L		103	70 - 130	2	20
2,4'-DDT			1.98	2.31		ug/L		116	70 - 130	3	20
2,4-Dinitrotoluene			1.98	2.00		ug/L		101	70 - 130	6	20
2,6-Dinitrotoluene			1.98	1.96		ug/L		99	70 - 130	7	20
2-Methylnaphthalene			1.98	2.02		ug/L		102	70 - 130	1	20
4,4'-DDD			1.98	2.22		ug/L		112	70 - 130	3	20
4,4'-DDE			1.98	2.15		ug/L		108	70 - 130	4	20
4,4'-DDT			1.98	2.06		ug/L		104	70 - 130	4	20
Acenaphthene			1.98	1.88		ug/L		95	70 - 130	1	20
Acenaphthylene			1.98	1.98		ug/L		100	70 - 130	1	20
Acetochlor			1.98	2.11		ug/L		107	70 - 130	0	20
Alachlor			1.98	2.07		ug/L		104	70 - 130	2	20
alpha-BHC			1.98	1.92		ug/L		97	70 - 130	3	20
alpha-Chlordane			1.98	2.09		ug/L		105	70 - 130	3	20
Anthracene			1.98	1.57		ug/L		79	70 - 130	2	20
Atrazine			1.98	2.26		ug/L		114	70 - 130	4	20
Benz(a)anthracene			1.98	1.91		ug/L		96	70 - 130	4	20

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

Lab Sample ID: LCSD 380-92588/24-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 92588

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[a]pyrene			1.98	1.88		ug/L		95	70 - 130	2	20
Benzo[b]fluoranthene			1.98	2.21		ug/L		111	70 - 130	0	20
Benzo[g,h,i]perylene			1.98	2.03		ug/L		103	70 - 130	2	20
Benzo[k]fluoranthene			1.98	2.11		ug/L		107	70 - 130	3	20
beta-BHC			1.98	1.97		ug/L		99	70 - 130	4	20
Bis(2-ethylhexyl) phthalate			1.98	2.21		ug/L		111	70 - 130	0	20
Bromacil			1.98	2.30		ug/L		116	70 - 130	8	20
Butachlor			1.98	2.20		ug/L		111	70 - 130	4	20
Butylbenzylphthalate			1.98	2.30		ug/L		116	70 - 130	2	20
Chlorobenzilate			1.98	1.95		ug/L		98	70 - 130	6	20
Chloroneb			1.98	2.00		ug/L		101	70 - 130	0	20
Chlorothalonil (Draconil, Bravo)			1.98	2.25		ug/L		113	70 - 130	1	20
Chlorpyrifos			1.98	2.16		ug/L		109	70 - 130	3	20
Chrysene			1.98	2.09		ug/L		105	70 - 130	1	20
delta-BHC			1.98	1.97		ug/L		99	70 - 130	1	20
Di(2-ethylhexyl)adipate			1.98	2.45		ug/L		123	70 - 130	1	20
Dibenz(a,h)anthracene			1.98	2.11		ug/L		106	70 - 130	2	20
Diclorvos (DDVP)			1.98	2.18		ug/L		110	70 - 130	3	20
Dieldrin			1.98	1.94		ug/L		98	70 - 130	3	20
Diethylphthalate			1.98	2.06		ug/L		104	70 - 130	3	20
Dimethylphthalate			1.98	2.04		ug/L		103	70 - 130	5	20
Di-n-butyl phthalate			3.96	4.28		ug/L		108	70 - 130	0	20
Di-n-octyl phthalate			1.98	2.11		ug/L		106	70 - 130	1	20
Endosulfan I (Alpha)			1.98	1.91		ug/L		96	70 - 130	3	20
Endosulfan II (Beta)			1.98	2.00		ug/L		101	70 - 130	3	20
Endosulfan sulfate			1.98	2.14		ug/L		108	70 - 130	3	20
Endrin			1.98	2.09		ug/L		105	70 - 130	4	20
Endrin aldehyde			1.98	1.57		ug/L		79	60 - 130	1	20
EPTC			1.98	2.27		ug/L		114	70 - 130	4	20
Fluoranthene			1.98	2.13		ug/L		108	70 - 130	2	20
Fluorene			1.98	2.07		ug/L		105	70 - 130	2	20
gamma-Chlordane			1.98	2.18		ug/L		110	70 - 130	3	20
Heptachlor			1.98	2.13		ug/L		107	70 - 130	2	20
Heptachlor epoxide (isomer B)			1.98	2.10		ug/L		106	70 - 130	2	20
Hexachlorobenzene			1.98	1.93		ug/L		97	70 - 130	5	20
Hexachlorocyclopentadiene			1.98	1.94		ug/L		98	70 - 130	3	20
Indeno[1,2,3-cd]pyrene			1.98	2.07		ug/L		105	70 - 130	0	20
Isophorone			1.98	2.11		ug/L		106	70 - 130	2	20
Lindane			1.98	1.96		ug/L		99	70 - 130	3	20
Malathion			1.98	2.18		ug/L		110	70 - 130	4	20
Methoxychlor			1.98	2.14		ug/L		108	70 - 130	2	20
Metolachlor			1.98	2.12		ug/L		107	70 - 130	3	20
Molinate			1.98	2.14		ug/L		108	70 - 130	2	20
Naphthalene			1.98	1.84		ug/L		93	70 - 130	1	20
Parathion			1.98	2.22		ug/L		112	70 - 130	5	20
Pendimethalin (Penoxaline)			1.98	2.11		ug/L		107	70 - 130	3	20
Phenanthrene			1.98	1.92		ug/L		97	70 - 130	0	20
Propachlor			1.98	2.11		ug/L		107	70 - 130	4	20
Pyrene			1.98	2.14		ug/L		108	70 - 130	3	20

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

Lab Sample ID: LCSD 380-92588/24-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 92588

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Simazine			1.98	2.17		ug/L		109	70 - 130	6	20
Terbacil			1.98	2.17		ug/L		109	70 - 130	1	20
Terbuthylazine			1.98	2.17		ug/L		109	70 - 130	4	20
Thiobencarb			1.98	2.40		ug/L		121	70 - 130	1	20
trans-Nonachlor			1.98	2.14		ug/L		108	70 - 130	3	20
Trifluralin			1.98	1.96		ug/L		99	70 - 130	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Nitro-m-xylene	*94*		*70 - 130*
Perylene-d12	*97*		*70 - 130*
Triphenylphosphate	*111*		*70 - 130*

Lab Sample ID: MRL 380-92588/22-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92588

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			0.0992	0.114		ug/L		115	50 - 150		
2,4'-DDD			0.0992	0.115		ug/L		116	50 - 150		
2,4'-DDE			0.0992	0.105		ug/L		105	50 - 150		
2,4'-DDT			0.0992	0.109		ug/L		110	50 - 150		
2,4-Dinitrotoluene			0.0992	0.106		ug/L		107	50 - 150		
2,6-Dinitrotoluene			0.0992	0.113		ug/L		114	50 - 150		
2-Methylnaphthalene			0.0992	0.111		ug/L		111	50 - 150		
4,4'-DDD			0.0992	0.113		ug/L		113	50 - 150		
4,4'-DDE			0.0992	0.100		ug/L		101	50 - 150		
4,4'-DDT			0.0992	0.124		ug/L		125	50 - 150		
Acenaphthene			0.0992	0.0935	J	ug/L		94	50 - 150		
Acenaphthylene			0.0992	0.101		ug/L		101	50 - 150		
Acetochlor			0.0496	0.0529	J	ug/L		107	50 - 150		
Alachlor			0.0496	0.0499	J	ug/L		101	50 - 150		
alpha-BHC			0.0992	0.106		ug/L		107	50 - 150		
alpha-Chlordane			0.0248	<0.029		ug/L		108	50 - 150		
Anthracene			0.0198	0.0199	J	ug/L		100	50 - 150		
Atrazine			0.0496	0.0503		ug/L		101	50 - 150		
Benz(a)anthracene			0.0496	0.0546		ug/L		110	50 - 150		
Benzo[a]pyrene			0.0198	0.0200		ug/L		101	50 - 150		
Benzo[b]fluoranthene			0.0198	0.0226		ug/L		114	50 - 150		
Benzo[g,h,i]perylene			0.0496	0.0520		ug/L		105	50 - 150		
Benzo[k]fluoranthene			0.0198	0.0212		ug/L		107	50 - 150		
beta-BHC			0.0992	0.115		ug/L		116	50 - 150		
Bis(2-ethylhexyl) phthalate			0.595	0.676		ug/L		114	50 - 150		
Bromacil			0.0992	0.116		ug/L		117	50 - 150		
Butachlor			0.0496	0.0558		ug/L		112	50 - 150		
Butylbenzylphthalate			0.149	0.159	J	ug/L		107	50 - 150		
Chlorobenzilate			0.0992	0.0707	J	ug/L		71	50 - 150		
Chloroneb			0.0992	0.0949	J	ug/L		96	50 - 150		
Chlorothalonil (Draconil, Bravo)			0.0992	0.130		ug/L		131	50 - 150		

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

Lab Sample ID: MRL 380-92588/22-A
Matrix: Water
Analysis Batch: 92797

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92588

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chlorpyrifos	0.0496	0.0529		ug/L		107	50 - 150
Chrysene	0.0198	0.0189	J	ug/L		95	50 - 150
delta-BHC	0.0992	0.122		ug/L		123	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.355	J	ug/L		119	50 - 150
Dibenz(a,h)anthracene	0.0496	0.0502		ug/L		101	50 - 150
Diclorvos (DDVP)	0.0496	0.0619		ug/L		125	50 - 150
Dieldrin	0.0992	0.102	J	ug/L		103	50 - 150
Diethylphthalate	0.149	0.157	J	ug/L		106	50 - 150
Dimethylphthalate	0.298	0.303	J	ug/L		102	50 - 150
Di-n-butyl phthalate	0.298	0.356	J	ug/L		120	49 - 243
Di-n-octyl phthalate	0.0992	0.110		ug/L		111	50 - 150
Endosulfan I (Alpha)	0.0992	0.0924	J	ug/L		93	50 - 150
Endosulfan II (Beta)	0.0992	0.122		ug/L		123	50 - 150
Endosulfan sulfate	0.0992	0.103		ug/L		104	50 - 150
Endrin	0.0992	0.112		ug/L		113	50 - 150
Endrin aldehyde	0.0992	0.100		ug/L		101	50 - 150
EPTC	0.0992	0.117		ug/L		118	50 - 150
Fluoranthene	0.0496	0.0540	J	ug/L		109	50 - 150
Fluorene	0.0496	0.0520		ug/L		105	50 - 150
gamma-Chlordane	0.0248	0.0264	J	ug/L		107	50 - 150
Heptachlor	0.0397	0.0479		ug/L		121	50 - 150
Heptachlor epoxide (isomer B)	0.0496	0.0576		ug/L		116	50 - 150
Hexachlorobenzene	0.0496	0.0496	J	ug/L		100	50 - 150
Hexachlorocyclopentadiene	0.0496	0.0582		ug/L		117	50 - 150
Indeno[1,2,3-cd]pyrene	0.0496	0.0510		ug/L		103	50 - 150
Isophorone	0.0992	0.121	J	ug/L		122	50 - 150
Lindane	0.0397	0.0408		ug/L		103	50 - 150
Malathion	0.0992	0.108		ug/L		108	50 - 150
Methoxychlor	0.0992	0.116		ug/L		117	50 - 150
Metolachlor	0.0496	0.0578		ug/L		117	50 - 150
Molinate	0.0992	0.124		ug/L		125	50 - 150
Naphthalene	0.0992	0.104	J	ug/L		104	50 - 150
Parathion	0.0992	0.125		ug/L		126	50 - 150
Pendimethalin (Penoxaline)	0.0992	0.100		ug/L		101	50 - 150
Phenanthrene	0.0198	0.0212	J	ug/L		107	50 - 150
Propachlor	0.0496	0.0499	J	ug/L		101	50 - 150
Pyrene	0.0496	0.0517		ug/L		104	50 - 150
Simazine	0.0496	0.0486	J	ug/L		98	50 - 150
Terbacil	0.0992	0.101		ug/L		102	50 - 150
Terbuthylazine	0.0992	0.109		ug/L		110	50 - 150
Thiobencarb	0.0992	0.125	J	ug/L		126	50 - 150
trans-Nonachlor	0.0248	0.0279	J	ug/L		112	50 - 150
Trifluralin	0.0992	0.115		ug/L		116	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*96*		*70 - 130*
Perylene-d12	*98*		*70 - 130*
Triphenylphosphate	*108*		*70 - 130*

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

Lab Sample ID: 380-96902-1 MS
Matrix: Water
Analysis Batch: 92797

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 92588

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.097		1.97	2.07		ug/L		105	70 - 130
2,4'-DDD	<0.097		1.97	2.29		ug/L		116	70 - 130
2,4'-DDE	<0.097		1.97	2.08		ug/L		106	70 - 130
2,4'-DDT	<0.097		1.97	2.32		ug/L		118	70 - 130
2,4-Dinitrotoluene	<0.097		1.97	2.11		ug/L		107	70 - 130
2,6-Dinitrotoluene	<0.097		1.97	2.11		ug/L		107	70 - 130
2-Methylnaphthalene	<0.097		1.97	2.08		ug/L		106	70 - 130
4,4'-DDD	<0.097		1.97	2.27		ug/L		116	70 - 130
4,4'-DDE	<0.097		1.97	2.18		ug/L		111	70 - 130
4,4'-DDT	<0.097		1.97	2.09		ug/L		106	70 - 130
Acenaphthene	<0.097		1.97	1.91		ug/L		97	70 - 130
Acenaphthylene	<0.097		1.97	2.02		ug/L		103	70 - 130
Acetochlor	<0.097		1.97	2.17		ug/L		110	70 - 130
Alachlor	<0.049		1.97	2.15		ug/L		109	70 - 130
alpha-BHC	<0.097		1.97	2.02		ug/L		102	70 - 130
alpha-Chlordane	<0.049		1.97	2.23		ug/L		113	70 - 130
Anthracene	<0.019	F1	1.97	1.04	F1	ug/L		53	70 - 130
Atrazine	<0.049		1.97	2.34		ug/L		119	70 - 130
Benz(a)anthracene	<0.049		1.97	1.94		ug/L		98	70 - 130
Benzo[a]pyrene	<0.019		1.97	1.73		ug/L		88	70 - 130
Benzo[b]fluoranthene	<0.019		1.97	2.14		ug/L		108	70 - 130
Benzo[g,h,i]perylene	<0.049		1.97	2.04		ug/L		103	70 - 130
Benzo[k]fluoranthene	<0.019		1.97	2.08		ug/L		106	70 - 130
beta-BHC	<0.097		1.97	2.04		ug/L		104	70 - 130
Bis(2-ethylhexyl) phthalate	<0.58		1.97	1.99		ug/L		101	70 - 130
Bromacil	<0.097		1.97	2.48		ug/L		126	70 - 130
Butachlor	<0.049		1.97	2.28		ug/L		116	70 - 130
Butylbenzylphthalate	<0.49		1.97	2.39		ug/L		121	70 - 130
Chlorobenzilate	<0.097		1.97	1.98		ug/L		100	70 - 130
Chloroneb	<0.097		1.97	2.09		ug/L		106	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.097		1.97	2.34		ug/L		119	70 - 130
Chlorpyrifos	<0.049		1.97	2.27		ug/L		115	70 - 130
Chrysene	<0.019		1.97	2.06		ug/L		105	70 - 130
delta-BHC	<0.097		1.97	1.97		ug/L		100	70 - 130
Di(2-ethylhexyl)adipate	<0.58		1.97	2.35		ug/L		119	70 - 130
Dibenz(a,h)anthracene	<0.049		1.97	1.95		ug/L		99	70 - 130
Diclorvos (DDVP)	<0.049		1.97	2.30		ug/L		117	70 - 130
Dieldrin	<0.19		1.97	2.08		ug/L		105	70 - 130
Diethylphthalate	<0.49		1.97	2.13		ug/L		108	70 - 130
Dimethylphthalate	<0.49		1.97	2.14		ug/L		109	70 - 130
Di-n-butyl phthalate	<0.97		3.94	4.34		ug/L		110	70 - 130
Di-n-octyl phthalate	<0.097		1.97	1.87		ug/L		95	70 - 130
Endosulfan I (Alpha)	<0.097		1.97	1.99		ug/L		101	70 - 130
Endosulfan II (Beta)	<0.097		1.97	2.08		ug/L		106	70 - 130
Endosulfan sulfate	<0.097		1.97	2.25		ug/L		114	70 - 130
Endrin	<0.097		1.97	2.19		ug/L		111	70 - 130
Endrin aldehyde	<0.097		1.97	1.82		ug/L		92	60 - 130
EPTC	<0.097		1.97	2.35		ug/L		119	70 - 130

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

Lab Sample ID: 380-96902-1 MS
Matrix: Water
Analysis Batch: 92797

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 92588

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	<0.097		1.97	2.21		ug/L		112	70 - 130
Fluorene	<0.049		1.97	2.13		ug/L		108	70 - 130
gamma-Chlordane	<0.049		1.97	2.25		ug/L		115	70 - 130
Heptachlor	<0.039		1.97	2.18		ug/L		111	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.97	2.25		ug/L		114	70 - 130
Hexachlorobenzene	<0.049		1.97	2.06		ug/L		105	70 - 130
Hexachlorocyclopentadiene	<0.049		1.97	2.11		ug/L		107	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.97	2.00		ug/L		102	70 - 130
Isophorone	<0.49		1.97	2.20		ug/L		112	70 - 130
Lindane	<0.039		1.97	2.07		ug/L		105	70 - 130
Malathion	<0.097		1.97	2.28		ug/L		116	70 - 130
Methoxychlor	<0.097		1.97	2.14		ug/L		109	70 - 130
Metolachlor	<0.049		1.97	2.23		ug/L		113	70 - 130
Molinate	<0.097		1.97	2.17		ug/L		110	70 - 130
Naphthalene	<0.29		1.97	1.90		ug/L		97	70 - 130
Parathion	<0.097		1.97	2.32		ug/L		118	70 - 130
Pendimethalin (Penoxaline)	<0.097		1.97	2.17		ug/L		110	70 - 130
Phenanthrene	<0.039		1.97	1.99		ug/L		101	70 - 130
Propachlor	<0.049		1.97	2.20		ug/L		112	70 - 130
Pyrene	<0.049		1.97	2.21		ug/L		112	70 - 130
Simazine	<0.049		1.97	2.28		ug/L		116	70 - 130
Terbacil	<0.097		1.97	2.24		ug/L		114	70 - 130
Terbuthylazine	<0.097		1.97	2.25		ug/L		114	70 - 130
Thiobencarb	<0.19		1.97	2.43		ug/L		123	70 - 130
trans-Nonachlor	<0.049		1.97	2.22		ug/L		113	70 - 130
Trifluralin	<0.097		1.97	2.07		ug/L		105	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*97*		*70 - 130*
Perylene-d12	*96*		*70 - 130*
Triphenylphosphate	*114*		*70 - 130*

Lab Sample ID: 380-96902-2 DU
Matrix: Water
Analysis Batch: 92797

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 92588

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.097		<0.097		ug/L		NC	20
2,4'-DDD	<0.097		<0.097		ug/L		NC	20
2,4'-DDE	<0.097		<0.097		ug/L		NC	20
2,4'-DDT	<0.097		<0.097		ug/L		NC	20
2,4-Dinitrotoluene	<0.097		<0.097		ug/L		NC	20
2,6-Dinitrotoluene	<0.097		<0.097		ug/L		NC	20
2-Methylnaphthalene	<0.097		<0.097		ug/L		NC	20
4,4'-DDD	<0.097		<0.097		ug/L		NC	20
4,4'-DDE	<0.097		<0.097		ug/L		NC	20
4,4'-DDT	<0.097		<0.097		ug/L		NC	20
Acenaphthene	<0.097		<0.097		ug/L		NC	20

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

Lab Sample ID: 380-96902-2 DU
Matrix: Water
Analysis Batch: 92797

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 92588

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Acenaphthylene	<0.097		<0.097		ug/L		NC	20
Acetochlor	<0.097		<0.097		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.097		<0.097		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.019		<0.019		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.019		<0.019		ug/L		NC	20
Benzo[b]fluoranthene	<0.019		<0.019		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.019		<0.019		ug/L		NC	20
beta-BHC	<0.097		<0.097		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.58		<0.58		ug/L		NC	20
Bromacil	<0.097		<0.097		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.097		<0.097		ug/L		NC	20
Chloroneb	<0.097		<0.097		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.097		<0.097		ug/L		NC	20
Chlorpyrifos	<0.049		<0.049		ug/L		NC	20
Chrysene	<0.019		<0.019		ug/L		NC	20
delta-BHC	<0.097		<0.097		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.58		<0.58		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049		<0.049		ug/L		NC	20
Dieldrin	<0.19		<0.19		ug/L		NC	20
Diethylphthalate	<0.49		<0.49		ug/L		NC	20
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20
Di-n-butyl phthalate	<0.97		<0.97		ug/L		NC	20
Di-n-octyl phthalate	<0.097		<0.097		ug/L		NC	20
Endosulfan I (Alpha)	<0.097		<0.097		ug/L		NC	20
Endosulfan II (Beta)	<0.097		<0.097		ug/L		NC	20
Endosulfan sulfate	<0.097		<0.097		ug/L		NC	20
Endrin	<0.097		<0.097		ug/L		NC	20
Endrin aldehyde	<0.097		<0.097		ug/L		NC	20
EPTC	<0.097		<0.097		ug/L		NC	20
Fluoranthene	<0.097		<0.097		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20
Heptachlor	<0.039		<0.039		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.049		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.049		ug/L		NC	20
Isophorone	<0.49		<0.49		ug/L		NC	20
Lindane	<0.039		<0.039		ug/L		NC	20
Malathion	<0.097		<0.097		ug/L		NC	20
Methoxychlor	<0.097		<0.097		ug/L		NC	20

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

Lab Sample ID: 380-96902-2 DU
Matrix: Water
Analysis Batch: 92797

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 92588

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Metolachlor	<0.049			<0.049		ug/L				NC	20
Molinate	<0.097			<0.097		ug/L				NC	20
Naphthalene	<0.29			<0.29		ug/L				NC	20
Parathion	<0.097			<0.097		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.097			<0.097		ug/L				NC	20
Phenanthrene	<0.039			<0.039		ug/L				NC	20
Propachlor	<0.049			<0.049		ug/L				NC	20
Pyrene	<0.049			<0.049		ug/L				NC	20
Simazine	<0.049			<0.049		ug/L				NC	20
Terbacil	<0.097			<0.097		ug/L				NC	20
Terbuthylazine	<0.097			<0.097		ug/L				NC	20
Thiobencarb	<0.19			<0.19		ug/L				NC	20
Total Permethrin (mixed isomers)	<0.19			<0.19		ug/L				NC	20
trans-Nonachlor	<0.049			<0.049		ug/L				NC	20
Trifluralin	<0.097			<0.097		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*101*		*70 - 130*
Perylene-d12	*95*		*70 - 130*
Triphenylphosphate	*113*		*70 - 130*

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

Lab Sample ID: MBL 380-91953/22-A
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91953

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1

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

Lab Sample ID: MBL 380-91953/22-A
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91953

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		05/23/24 10:26	05/24/24 13:17	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*88*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C6 PFDA	*97*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C5 PFHxA	*95*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C4 PFHpA	*101*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C8 PFOA	*102*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C9 PFNA	*102*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C7 PFUnA	*88*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C2 PFDoA	*89*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C4 PFBA	*96*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C5 PFPeA	*103*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C3 PFBS	*102*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C3 PFHxS	*104*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C8 PFOS	*99*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C2-4:2-FTS	*115*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C2-6:2-FTS	*99*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*
13C2-8:2-FTS	*86*		*50 - 200*	*05/23/24 10:26*	*05/24/24 13:17*	*1*

Lab Sample ID: LCS 380-91953/24-A
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91953

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			120	86.8		ng/L		72	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			120	94.2		ng/L		78	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			120	110		ng/L		91	70 - 130		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			120	112		ng/L		93	70 - 130		

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

Lab Sample ID: LCS 380-91953/24-A
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91953

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid (PFBS)	120	101		ng/L		84	70 - 130
Perfluorodecanoic acid (PFDA)	120	113		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	120	103		ng/L		86	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	111		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	110		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	120	110		ng/L		92	70 - 130
Perfluorononanoic acid (PFNA)	120	109		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	107		ng/L		89	70 - 130
Perfluorooctanoic acid (PFOA)	120	107		ng/L		89	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	107		ng/L		89	70 - 130
Perfluorobutanoic acid (PFBA)	120	105		ng/L		87	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	112		ng/L		93	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	86.5		ng/L		72	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	93.1		ng/L		77	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	107		ng/L		89	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	105		ng/L		87	70 - 130
Perfluoropentanoic acid (PFPeA)	120	108		ng/L		90	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	108		ng/L		90	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	110		ng/L		91	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*95*		*50 - 200*
13C6 PFDA	*104*		*50 - 200*
13C5 PFHxA	*98*		*50 - 200*
13C4 PFHpA	*101*		*50 - 200*
13C8 PFOA	*106*		*50 - 200*
13C9 PFNA	*107*		*50 - 200*
13C7 PFUnA	*96*		*50 - 200*
13C2 PFDoA	*97*		*50 - 200*
13C4 PFBA	*102*		*50 - 200*
13C5 PFPeA	*104*		*50 - 200*
13C3 PFBS	*109*		*50 - 200*
13C3 PFHxS	*106*		*50 - 200*
13C8 PFOS	*106*		*50 - 200*
13C2-4:2-FTS	*114*		*50 - 200*
13C2-6:2-FTS	*105*		*50 - 200*

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

Lab Sample ID: LCS 380-91953/24-A
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91953

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2-8:2-FTS	93		50 - 200

Lab Sample ID: MRL 380-91953/23-A
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91953

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.61	J	ng/L		80	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.74	J	ng/L		86	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.07	J	ng/L		103	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.00	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.14	J	ng/L		107	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.12	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.04	J	ng/L		101	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.95	J	ng/L		97	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.06	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.17	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.59	J	ng/L		129	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.84	J	ng/L		91	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.14	J	ng/L		106	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.98	J	ng/L		99	50 - 150

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

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	89		50 - 200
13C6 PFDA	98		50 - 200
13C5 PFHxA	96		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	101		50 - 200
13C7 PFUnA	91		50 - 200
13C2 PFDoA	89		50 - 200
13C4 PFBA	102		50 - 200
13C5 PFPeA	101		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	118		50 - 200
13C2-6:2-FTS	100		50 - 200
13C2-8:2-FTS	87		50 - 200

Lab Sample ID: 380-96888-D-1-B MS
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 91953

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	87.3		ng/L		72	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	95.4		ng/L		79	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	108		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	109		ng/L		90	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	110		ng/L		91	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	116		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	109		ng/L		90	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	109		ng/L		90	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	108		ng/L		89	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	110		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	110		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	110		ng/L		90	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	109		ng/L		89	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	113		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	107		ng/L		89	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	114		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	115		ng/L		95	70 - 130

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

Lab Sample ID: 380-96888-D-1-B MS
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 91953

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0	F1	121	90.4		ng/L		75	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	96.0		ng/L		79	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	114		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	106		ng/L		87	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	107		ng/L		88	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	107		ng/L		88	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	107		ng/L		88	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*88*		*50 - 200*
13C6 PFDA	*99*		*50 - 200*
13C5 PFHxA	*89*		*50 - 200*
13C4 PFHpA	*95*		*50 - 200*
13C8 PFOA	*99*		*50 - 200*
13C9 PFNA	*102*		*50 - 200*
13C7 PFUnA	*93*		*50 - 200*
13C2 PFDoA	*94*		*50 - 200*
13C4 PFBA	*92*		*50 - 200*
13C5 PFPeA	*105*		*50 - 200*
13C3 PFBS	*108*		*50 - 200*
13C3 PFHxS	*112*		*50 - 200*
13C8 PFOS	*108*		*50 - 200*
13C2-4:2-FTS	*116*		*50 - 200*
13C2-6:2-FTS	*105*		*50 - 200*
13C2-8:2-FTS	*98*		*50 - 200*

Lab Sample ID: 380-96888-D-1-C MSD
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 91953

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	94.3		ng/L		78	70 - 130	8	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	106		ng/L		87	70 - 130	10	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	117		ng/L		97	70 - 130	8	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	111		ng/L		92	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	120		ng/L		99	70 - 130	8	30
Perfluorodecanoic acid (PFDA)	<2.0		121	122		ng/L		101	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	116		ng/L		96	70 - 130	6	30

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

Lab Sample ID: 380-96888-D-1-C MSD
Matrix: Water
Analysis Batch: 92149

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 91953

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoroheptanoic acid (PFHpA)	<2.0		121	120		ng/L		98	70 - 130	9	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	114		ng/L		94	70 - 130	6	30
Perfluorohexanoic acid (PFHxA)	<2.0		121	118		ng/L		97	70 - 130	8	30
Perfluorononanoic acid (PFNA)	<2.0		121	117		ng/L		97	70 - 130	6	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	119		ng/L		98	70 - 130	8	30
Perfluorooctanoic acid (PFOA)	<2.0		121	116		ng/L		95	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	124		ng/L		102	70 - 130	9	30
Perfluorobutanoic acid (PFBA)	<2.0		121	117		ng/L		96	70 - 130	8	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	119		ng/L		99	70 - 130	7	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	117		ng/L		97	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	125		ng/L		104	70 - 130	9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0	F1	121	83.8	F1	ng/L		69	70 - 130	8	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	110		ng/L		91	70 - 130	13	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	121		ng/L		100	70 - 130	6	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	118		ng/L		97	70 - 130	11	30
Perfluoropentanoic acid (PFPeA)	<2.0		121	117		ng/L		96	70 - 130	9	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	117		ng/L		96	70 - 130	9	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	112		ng/L		93	70 - 130	5	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*81*		*50 - 200*
13C6 PFDA	*92*		*50 - 200*
13C5 PFHxA	*80*		*50 - 200*
13C4 PFHpA	*83*		*50 - 200*
13C8 PFOA	*87*		*50 - 200*
13C9 PFNA	*91*		*50 - 200*
13C7 PFUnA	*83*		*50 - 200*
13C2 PFDoA	*89*		*50 - 200*
13C4 PFBA	*84*		*50 - 200*
13C5 PFPeA	*93*		*50 - 200*
13C3 PFBS	*99*		*50 - 200*
13C3 PFHxS	*106*		*50 - 200*
13C8 PFOS	*100*		*50 - 200*
13C2-4:2-FTS	*112*		*50 - 200*
13C2-6:2-FTS	*102*		*50 - 200*
13C2-8:2-FTS	*94*		*50 - 200*

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

Lab Sample ID: MBL 380-91928/21-A
Matrix: Water
Analysis Batch: 92224

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91928

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/23/24 10:15	05/24/24 18:28	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*103*		*70 - 130*	*05/23/24 10:15*	*05/24/24 18:28*	*1*
13C2 PFHxA	*107*		*70 - 130*	*05/23/24 10:15*	*05/24/24 18:28*	*1*
13C2 PFDA	*100*		*70 - 130*	*05/23/24 10:15*	*05/24/24 18:28*	*1*
13C3-GenX	*97*		*70 - 130*	*05/23/24 10:15*	*05/24/24 18:28*	*1*

Lab Sample ID: LCS 380-91928/23-A
Matrix: Water
Analysis Batch: 92224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91928

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			50.1	47.1		ng/L		94	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			50.1	51.8		ng/L		103	70 - 130		
Perfluoroundecanoic acid (PFUnA)			50.1	46.8		ng/L		93	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			50.1	50.1		ng/L		100	70 - 130		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			50.1	48.5		ng/L		97	70 - 130		
Perfluorohexanoic acid (PFHxA)			50.1	50.8		ng/L		101	70 - 130		
Perfluorododecanoic acid (PFDoA)			50.1	50.3		ng/L		100	70 - 130		
Perfluorooctanoic acid (PFOA)			50.1	52.1		ng/L		104	70 - 130		
Perfluorodecanoic acid (PFDA)			50.1	50.1		ng/L		100	70 - 130		

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

Lab Sample ID: LCS 380-91928/23-A
Matrix: Water
Analysis Batch: 92224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91928

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	50.1	51.7		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	48.7		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	50.5		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	50.1	52.4		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	47.3		ng/L		94	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	47.2		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.1	54.7		ng/L		109	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	49.3		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	52.7		ng/L		105	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d5-NEtFOSAA	*103*		*70 - 130*
13C2 PFHxA	*104*		*70 - 130*
13C2 PFDA	*104*		*70 - 130*
13C3-GenX	*101*		*70 - 130*

Lab Sample ID: MRL 380-91928/22-A
Matrix: Water
Analysis Batch: 92224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91928

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.84	J	ng/L		91	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.86	J	ng/L		92	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	1.93	J	ng/L		96	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	1.85	J	ng/L		92	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.95	J	ng/L		97	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.02	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.74	J	ng/L		87	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.16	J	ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	1.96	J	ng/L		98	50 - 150

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

Lab Sample ID: MRL 380-91928/22-A
Matrix: Water
Analysis Batch: 92224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91928

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotridecanoic acid (PFTrDA)	2.01	1.88	J	ng/L		94	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.06	J	ng/L		103	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.90	J	ng/L		95	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.10	J	ng/L		105	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*94*		*70 - 130*
13C2 PFHxA	*100*		*70 - 130*
13C2 PFDA	*97*		*70 - 130*
13C3-GenX	*87*		*70 - 130*

Lab Sample ID: 380-96888-A-1-B MS
Matrix: Water
Analysis Batch: 92224

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 91928

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		50.4	44.3		ng/L		88	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.4	49.6		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.4	45.2		ng/L		90	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.4	47.5		ng/L		94	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.4	46.3		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.4	48.7		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.4	47.8		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.4	49.3		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.4	48.8		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.4	51.0		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.4	50.2		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.4	49.2		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.4	50.1		ng/L		99	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.4	45.1		ng/L		89	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.4	46.0		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.4	54.4		ng/L		108	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.4	47.1		ng/L		93	70 - 130

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

Lab Sample ID: 380-96888-A-1-B MS
Matrix: Water
Analysis Batch: 92224

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 91928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.4	47.6		ng/L		94	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*97*		*70 - 130*
13C2 PFHxA	*103*		*70 - 130*
13C2 PFDA	*100*		*70 - 130*
13C3-GenX	*94*		*70 - 130*

Lab Sample ID: 380-96888-A-1-C MSD
Matrix: Water
Analysis Batch: 92224

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 91928

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		50.3	47.8		ng/L		95	70 - 130	8	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.3	50.8		ng/L		101	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.3	46.4		ng/L		92	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.3	47.7		ng/L		95	70 - 130	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.3	47.0		ng/L		94	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.3	50.0		ng/L		98	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.3	49.2		ng/L		98	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		50.3	51.6		ng/L		101	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		50.3	50.2		ng/L		100	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.3	51.8		ng/L		102	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.3	50.3		ng/L		100	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.3	50.6		ng/L		100	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		50.3	50.9		ng/L		101	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.3	46.1		ng/L		92	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.3	48.1		ng/L		96	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.3	52.6		ng/L		105	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.3	46.5		ng/L		92	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.3	51.0		ng/L		101	70 - 130	7	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*100*		*70 - 130*
13C2 PFHxA	*104*		*70 - 130*
13C2 PFDA	*103*		*70 - 130*

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

Lab Sample ID: 380-96888-A-1-C MSD
Matrix: Water
Analysis Batch: 92224

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 91928

Surrogate	MSD %Recovery	MSD Qualifier	Limits
13C3-GenX	100		70 - 130

GC/MS Semi VOA

Prep Batch: 92588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96902-1	MOANALUA WELLS	Total/NA	Water	525.2	
380-96902-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	
MB 380-92588/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-92588/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-92588/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-92588/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-96902-1 MS	MOANALUA WELLS	Total/NA	Water	525.2	
380-96902-2 DU	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	

Analysis Batch: 92797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96902-1	MOANALUA WELLS	Total/NA	Water	525.2	92588
380-96902-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	92588
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	92588
MB 380-92588/21-A	Method Blank	Total/NA	Water	525.2	92588
LCS 380-92588/23-A	Lab Control Sample	Total/NA	Water	525.2	92588
LCSD 380-92588/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	92588
MRL 380-92588/22-A	Lab Control Sample	Total/NA	Water	525.2	92588
380-96902-1 MS	MOANALUA WELLS	Total/NA	Water	525.2	92588
380-96902-2 DU	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	92588

LCMS

Prep Batch: 91928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96902-1	MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-96902-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-96902-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1 DW	
380-96902-5	FB: MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-96902-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-96902-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-96902-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1 DW	
MBL 380-91928/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-91928/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-91928/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-96888-A-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-96888-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 91953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96902-1	MOANALUA WELLS	Total/NA	Water	533	
380-96902-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-96902-5	FB: MOANALUA WELLS	Total/NA	Water	533	
380-96902-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-96902-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
MBL 380-91953/22-A	Method Blank	Total/NA	Water	533	
LCS 380-91953/24-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-91953/23-A	Lab Control Sample	Total/NA	Water	533	

LCMS (Continued)

Prep Batch: 91953 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96888-D-1-B MS	Matrix Spike	Total/NA	Water	533	
380-96888-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 92149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96902-1	MOANALUA WELLS	Total/NA	Water	533	91953
380-96902-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	91953
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	91953
380-96902-5	FB: MOANALUA WELLS	Total/NA	Water	533	91953
380-96902-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	91953
380-96902-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	91953
MBL 380-91953/22-A	Method Blank	Total/NA	Water	533	91953
LCS 380-91953/24-A	Lab Control Sample	Total/NA	Water	533	91953
MRL 380-91953/23-A	Lab Control Sample	Total/NA	Water	533	91953
380-96888-D-1-B MS	Matrix Spike	Total/NA	Water	533	91953
380-96888-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	91953

Analysis Batch: 92224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-96902-1	MOANALUA WELLS	Total/NA	Water	537.1	91928
380-96902-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	91928
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	91928
380-96902-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1	91928
380-96902-5	FB: MOANALUA WELLS	Total/NA	Water	537.1	91928
380-96902-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	91928
380-96902-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	91928
380-96902-8	FB: HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1	91928
MBL 380-91928/21-A	Method Blank	Total/NA	Water	537.1	91928
LCS 380-91928/23-A	Lab Control Sample	Total/NA	Water	537.1	91928
MRL 380-91928/22-A	Lab Control Sample	Total/NA	Water	537.1	91928
380-96888-A-1-B MS	Matrix Spike	Total/NA	Water	537.1	91928
380-96888-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	91928

Lab Chronicle

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Lab Sample ID: 380-96902-1
Date Collected: 05/20/24 10:09
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			92588	OTM3	EA POM	05/29/24 09:15
Total/NA	Analysis	525.2		1	92797	UPAC	EA POM	05/30/24 13:09
Total/NA	Prep	533			91953	A5GB	EA POM	05/23/24 10:26
Total/NA	Analysis	533		1	92149	Y5FM	EA POM	05/24/24 15:50
Total/NA	Prep	537.1 DW			91928	SL5Q	EA POM	05/23/24 10:15
Total/NA	Analysis	537.1		1	92224	R6YA	EA POM	05/24/24 20:16

Client Sample ID: AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-96902-2
Date Collected: 05/20/24 11:01
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			92588	OTM3	EA POM	05/29/24 09:15
Total/NA	Analysis	525.2		1	92797	UPAC	EA POM	05/30/24 13:29
Total/NA	Prep	533			91953	A5GB	EA POM	05/23/24 10:26
Total/NA	Analysis	533		1	92149	Y5FM	EA POM	05/24/24 16:00
Total/NA	Prep	537.1 DW			91928	SL5Q	EA POM	05/23/24 10:15
Total/NA	Analysis	537.1		1	92224	R6YA	EA POM	05/24/24 20:25

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-96902-3
Date Collected: 05/20/24 11:27
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			92588	OTM3	EA POM	05/29/24 09:15
Total/NA	Analysis	525.2		1	92797	UPAC	EA POM	05/30/24 13:49
Total/NA	Prep	533			91953	A5GB	EA POM	05/23/24 10:26
Total/NA	Analysis	533		1	92149	Y5FM	EA POM	05/24/24 16:10
Total/NA	Prep	537.1 DW			91928	SL5Q	EA POM	05/23/24 10:15
Total/NA	Analysis	537.1		1	92224	R6YA	EA POM	05/24/24 20:35

Client Sample ID: HALAWA WELLS UNITS 1&2 P1
Lab Sample ID: 380-96902-4
Date Collected: 05/20/24 10:35
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			91928	SL5Q	EA POM	05/23/24 10:15
Total/NA	Analysis	537.1		1	92224	R6YA	EA POM	05/24/24 20:45

Client Sample ID: FB: MOANALUA WELLS
Lab Sample ID: 380-96902-5
Date Collected: 05/20/24 10:09
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			91953	A5GB	EA POM	05/23/24 10:26
Total/NA	Analysis	533		1	92149	Y5FM	EA POM	05/24/24 16:29

Lab Chronicle

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB: MOANALUA WELLS
Lab Sample ID: 380-96902-5
Date Collected: 05/20/24 10:09
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			91928	SL5Q	EA POM	05/23/24 10:15
Total/NA	Analysis	537.1		1	92224	R6YA	EA POM	05/24/24 21:06

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-96902-6
Date Collected: 05/20/24 11:01
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			91953	A5GB	EA POM	05/23/24 10:26
Total/NA	Analysis	533		1	92149	Y5FM	EA POM	05/24/24 16:38
Total/NA	Prep	537.1 DW			91928	SL5Q	EA POM	05/23/24 10:15
Total/NA	Analysis	537.1		1	92224	R6YA	EA POM	05/24/24 21:17

Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-96902-7
Date Collected: 05/20/24 11:27
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			91953	A5GB	EA POM	05/23/24 10:26
Total/NA	Analysis	533		1	92149	Y5FM	EA POM	05/24/24 16:48
Total/NA	Prep	537.1 DW			91928	SL5Q	EA POM	05/23/24 10:15
Total/NA	Analysis	537.1		1	92224	R6YA	EA POM	05/24/24 21:26

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 P1
Lab Sample ID: 380-96902-8
Date Collected: 05/20/24 10:35
Matrix: Water
Date Received: 05/22/24 10:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			91928	SL5Q	EA POM	05/23/24 10:15
Total/NA	Analysis	537.1		1	92224	R6YA	EA POM	05/24/24 21:36

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

Accreditation/Certification Summary

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

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	01-31-25

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	Water	1-Methylnaphthalene
525.2	525.2	Water	2,4'-DDD
525.2	525.2	Water	2,4'-DDE
525.2	525.2	Water	2,4'-DDT
525.2	525.2	Water	2,4-Dinitrotoluene
525.2	525.2	Water	2,6-Dinitrotoluene
525.2	525.2	Water	2-Methylnaphthalene
525.2	525.2	Water	4,4'-DDD
525.2	525.2	Water	4,4'-DDE
525.2	525.2	Water	4,4'-DDT
525.2	525.2	Water	Acetochlor
525.2	525.2	Water	alpha-BHC
525.2	525.2	Water	alpha-Chlordane
525.2	525.2	Water	beta-BHC
525.2	525.2	Water	Chlorobenzilate
525.2	525.2	Water	Chloroneb
525.2	525.2	Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Water	Chlorpyrifos
525.2	525.2	Water	delta-BHC
525.2	525.2	Water	Diclorvos (DDVP)
525.2	525.2	Water	Endosulfan I (Alpha)
525.2	525.2	Water	Endosulfan II (Beta)
525.2	525.2	Water	Endosulfan sulfate
525.2	525.2	Water	Endrin aldehyde
525.2	525.2	Water	EPTC
525.2	525.2	Water	gamma-Chlordane
525.2	525.2	Water	Isophorone
525.2	525.2	Water	Malathion
525.2	525.2	Water	Parathion
525.2	525.2	Water	Pendimethalin (Penoxaline)
525.2	525.2	Water	Terbacil
525.2	525.2	Water	Terbuthylazine
525.2	525.2	Water	Total Permethrin (mixed isomers)
525.2	525.2	Water	trans-Nonachlor

Method Summary

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
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

Laboratory References:

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

Sample Summary

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

Job ID: 380-96902-1
SDG: 525.2, 533, 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-96902-1	MOANALUA WELLS	Water	05/20/24 10:09	05/22/24 10:34
380-96902-2	AIEA GULCH WELLS PUMP 2	Water	05/20/24 11:01	05/22/24 10:34
380-96902-3	AIEA WELLS PUMPS 1&2 (260) P2	Water	05/20/24 11:27	05/22/24 10:34
380-96902-4	HALAWA WELLS UNITS 1&2 P1	Water	05/20/24 10:35	05/22/24 10:34
380-96902-5	FB: MOANALUA WELLS	Water	05/20/24 10:09	05/22/24 10:34
380-96902-6	FB: AIEA GULCH WELLS PUMP 2	Water	05/20/24 11:01	05/22/24 10:34
380-96902-7	FB: AIEA WELLS PUMPS 1&2 (260) P2	Water	05/20/24 11:27	05/22/24 10:34
380-96902-8	FB: HALAWA WELLS UNITS 1&2 P1	Water	05/20/24 10:35	05/22/24 10:34

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

Chain of Custody Record

eurofins

Client Information	Sampler	Lab PM	Carrier Tracking No(s)	COC No
	C2ilby	Arada, Rachelle		380-27941-2757 2
Client Contact: Dr Ron Fenstermacher	Phone 808-748-5840	E-Mail Rachelle.Arada@et.eurofinsus.com	State of Origin	Page Page 3 of 2
Company City & County of Honolulu	PWSID			Job #
Address 630 South Beretania Street, Chemistry Lab	Due Date Requested			
City Honolulu	TAT Requested (days)			
State, Zip HI, 96843	Compliance Project Δ No			
Phone 808-748-5091 (tel)	PO # C20525101 exp 05312023			
Email rfenstemacher@hbws.org	WO #			
Project Name RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill	Project # 38001111			
Site	SSOW#			

Analysis Requested

Preservation Codes
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify), Other

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8 C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note
			Preservation Code				R	A	Q	QA	Y	I		
MOANALUA WELLS	20-May-2024	1009	G	Water							3	3		chlorinated
AIEA GULCH WELLS PUMP2	20-May-2024	1101	G	Water							3	3		chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	20-May-2024	1127	G	Water							3	3		
HALAWA WELLS UNITS 1&2 P1	20-May-2024	1035	G	Water							3	3		
FB MOANALUA WELLS	20-May-2024	1009		Water							1	1		
FB AIEA GULCH WELLS PUMP2	20-May-2024	1101		Water							1	1		
FB AIEA WELLS PUMPS 1&2 (260)	20-May-2024	1127		Water							1	1		
FB HALAWA WELLS UNITS 1&2	20-May-2024	1035		Water							1	1		

380-96902 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements
① 7764 9156 5938
Method of Shipment: FED EX ② 7764 9156 5949

Empty Kit Relinquished by	Date	Time

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
C2ilby	21May2024 1400	HBWS	G. RETTNER	05/22/2024 10:34	EEAP
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact	Custody Seal No	Cooler Temperature(s) °C and Other Remarks
Δ Yes Δ No		751A ① 1.4°-0.1°-1.3° / ② 0.8°-0.1°-0.7° GEL FROZEN

Ver 01/16/2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-96902-1
SDG Number: 525.2, 533, 537.1

Login Number: 96902
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	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 6/6/2024 11:14:37 AM

JOB DESCRIPTION

RED-HILL
525.2, 533, 537.1
RUSH Weekly Red Hill

JOB NUMBER

380-97851-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

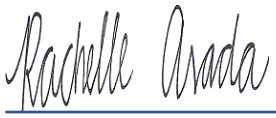
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Qualifiers

GC/MS 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.

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.

LCMS

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

Glossary

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

Job Narrative
380-97851-1

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 5/31/2024 10:09 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 2.5°C and 3.0°C.

Receipt Exceptions
The following samples were submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-97851-7), FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-97851-8) and FB: HALAWA WELLS UNITS 1&2 (331-206-TP065) (380-97851-9)

Bottle received half filled.

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 (331-206-TP065) (380-97851-3)

GC/MS Semi VOA
Method 525.2_PREC: Bottle received half filled.

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

PFAS
Method 533: 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 (331-206-TP065) (380-97851-3)

Method 537.1_DW_PREC: 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 (331-206-TP065) (380-97851-3)

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

Detection Summary

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Lab Sample ID: 380-97851-1

PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Lab Sample ID: 380-97851-2

PWSID Number: HI0000331

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Lab Sample ID: 380-97851-3

PWSID Number: HI0000331

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.2		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		2.0		ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.2		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Lab Sample ID: 380-97851-7

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Lab Sample ID: 380-97851-8

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)
Lab Sample ID: 380-97851-9

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Lab Sample ID: 380-97851-1
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		06/01/24 16:35	06/03/24 19:18	1
2,4'-DDD	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
2,4'-DDE	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
2,4'-DDT	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
2-Methylnaphthalene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
4,4'-DDD	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
4,4'-DDE	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
4,4'-DDT	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Acenaphthene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Acenaphthylene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Acetochlor	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Alachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
alpha-BHC	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
alpha-Chlordane	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Anthracene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:18	1
Atrazine	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Benz(a)anthracene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:18	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:18	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:18	1
beta-BHC	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60		ug/L		06/01/24 16:35	06/03/24 19:18	1
Bromacil	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Butachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Butylbenzylphthalate	<0.50		0.50		ug/L		06/01/24 16:35	06/03/24 19:18	1
Chlorobenzilate	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Chloroneb	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Chlorpyrifos	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Chrysene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:18	1
delta-BHC	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Di(2-ethylhexyl)adipate	<0.60		0.60		ug/L		06/01/24 16:35	06/03/24 19:18	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Dieldrin	<0.20		0.20		ug/L		06/01/24 16:35	06/03/24 19:18	1
Diethylphthalate	<0.50		0.50		ug/L		06/01/24 16:35	06/03/24 19:18	1
Dimethylphthalate	<0.50		0.50		ug/L		06/01/24 16:35	06/03/24 19:18	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		06/01/24 16:35	06/03/24 19:18	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Endosulfan sulfate	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Endrin	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Endrin aldehyde	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
EPTC	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Lab Sample ID: 380-97851-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Fluorene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
gamma-Chlordane	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Heptachlor	<0.040		0.040		ug/L		06/01/24 16:35	06/03/24 19:18	1
Heptachlor epoxide (isomer B)	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Hexachlorobenzene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Isophorone	<0.50		0.50		ug/L		06/01/24 16:35	06/03/24 19:18	1
Lindane	<0.040		0.040		ug/L		06/01/24 16:35	06/03/24 19:18	1
Malathion	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Methoxychlor	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Metolachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Molinate	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Naphthalene	<0.30		0.30		ug/L		06/01/24 16:35	06/03/24 19:18	1
Parathion	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Phenanthrene	<0.040		0.040		ug/L		06/01/24 16:35	06/03/24 19:18	1
Propachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Pyrene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Simazine	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Terbacil	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Terbuthylazine	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1
Thiobencarb	<0.20		0.20		ug/L		06/01/24 16:35	06/03/24 19:18	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/01/24 16:35	06/03/24 19:18	1
trans-Nonachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:18	1
Trifluralin	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.78*	*T J*	*ug/L*		*2.61*	*N/A*	*06/01/24 16:35*	*06/03/24 19:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*102*		*70 - 130*	*06/01/24 16:35*	*06/03/24 19:18*	*1*
Perylene-d12	*92*		*70 - 130*	*06/01/24 16:35*	*06/03/24 19:18*	*1*
Triphenylphosphate	*97*		*70 - 130*	*06/01/24 16:35*	*06/03/24 19:18*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Lab Sample ID: 380-97851-1

Date Collected: 05/29/24 10:40
Matrix: Drinking Water

Date Received: 05/31/24 10:09
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
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 16:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*77*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C6 PFDA	*83*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C5 PFHxA	*83*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C4 PFHpA	*85*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C8 PFOA	*79*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C9 PFNA	*76*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C7 PFUnA	*84*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C2 PFDoA	*84*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C4 PFBA	*83*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C5 PFPeA	*90*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C3 PFBS	*100*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C3 PFHxS	*110*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C8 PFOS	*98*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C2-4:2-FTS	*125*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C2-6:2-FTS	*124*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*1*
13C2-8:2-FTS	*105*		*50 - 200*	*06/02/24 13:14*	*06/03/24 16:58*	*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		06/01/24 08:01	06/02/24 20:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-1

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*90*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:38*	*1*
13C2 PFHxA	*99*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:38*	*1*
13C2 PFDA	*95*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:38*	*1*
13C3-GenX	*96*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:38*	*1*

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-2

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

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	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
2,4'-DDD	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
2,4'-DDE	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
2,4'-DDT	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
2-Methylnaphthalene	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
4,4'-DDD	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
4,4'-DDE	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
4,4'-DDT	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Acenaphthene	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Acenaphthylene	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Acetochlor	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Alachlor	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
alpha-BHC	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
alpha-Chlordane	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Lab Sample ID: 380-97851-2
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	<0.019		0.019		ug/L		06/01/24 16:35	06/03/24 19:38	1
Atrazine	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Benzo[a]pyrene	<0.019		0.019		ug/L		06/01/24 16:35	06/03/24 19:38	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		06/01/24 16:35	06/03/24 19:38	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		06/01/24 16:35	06/03/24 19:38	1
beta-BHC	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		06/01/24 16:35	06/03/24 19:38	1
Bromacil	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Butachlor	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/01/24 16:35	06/03/24 19:38	1
Chlorobenzilate	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Chloroneb	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Chlorpyrifos	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Chrysene	<0.019		0.019		ug/L		06/01/24 16:35	06/03/24 19:38	1
delta-BHC	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		06/01/24 16:35	06/03/24 19:38	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Dieldrin	<0.19		0.19		ug/L		06/01/24 16:35	06/03/24 19:38	1
Diethylphthalate	<0.49		0.49		ug/L		06/01/24 16:35	06/03/24 19:38	1
Dimethylphthalate	<0.49		0.49		ug/L		06/01/24 16:35	06/03/24 19:38	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		06/01/24 16:35	06/03/24 19:38	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Endosulfan sulfate	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Endrin	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Endrin aldehyde	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
EPTC	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Fluoranthene	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Fluorene	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
gamma-Chlordane	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Heptachlor	<0.039		0.039		ug/L		06/01/24 16:35	06/03/24 19:38	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Isophorone	<0.49		0.49		ug/L		06/01/24 16:35	06/03/24 19:38	1
Lindane	<0.039		0.039		ug/L		06/01/24 16:35	06/03/24 19:38	1
Malathion	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Methoxychlor	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Metolachlor	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Molinate	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Naphthalene	<0.29		0.29		ug/L		06/01/24 16:35	06/03/24 19:38	1
Parathion	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Lab Sample ID: 380-97851-2
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Phenanthrene	<0.039		0.039		ug/L		06/01/24 16:35	06/03/24 19:38	1
Propachlor	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Pyrene	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Simazine	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Terbacil	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Terbuthylazine	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1
Thiobencarb	<0.19		0.19		ug/L		06/01/24 16:35	06/03/24 19:38	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		06/01/24 16:35	06/03/24 19:38	1
trans-Nonachlor	<0.049		0.049		ug/L		06/01/24 16:35	06/03/24 19:38	1
Trifluralin	<0.097		0.097		ug/L		06/01/24 16:35	06/03/24 19:38	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/01/24 16:35*	*06/03/24 19:38*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*119*		*70 - 130*	*06/01/24 16:35*	*06/03/24 19:38*	*1*
Perylene-d12	*99*		*70 - 130*	*06/01/24 16:35*	*06/03/24 19:38*	*1*
Triphenylphosphate	*96*		*70 - 130*	*06/01/24 16:35*	*06/03/24 19:38*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Lab Sample ID: 380-97851-2
Matrix: Drinking Water
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		06/02/24 13:14	06/03/24 17:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*85*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C6 PFDA	*87*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C5 PFHxA	*84*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C4 PFHpA	*91*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C8 PFOA	*88*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C9 PFNA	*83*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C7 PFUnA	*85*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C2 PFDoA	*84*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C4 PFBA	*92*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C5 PFPeA	*98*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C3 PFBS	*96*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C3 PFHxS	*107*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C8 PFOS	*99*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C2-4:2-FTS	*130*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C2-6:2-FTS	*126*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*1*
13C2-8:2-FTS	*110*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:08*	*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		06/01/24 08:01	06/02/24 20:47	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-2

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 20:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*96*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:47*	*1*
13C2 PFHxA	*104*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:47*	*1*
13C2 PFDA	*97*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:47*	*1*
13C3-GenX	*96*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:47*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-97851-3

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

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		06/01/24 16:35	06/03/24 19:58	1
2,4'-DDD	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
2,4'-DDE	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
2,4'-DDT	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
2-Methylnaphthalene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
4,4'-DDD	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
4,4'-DDE	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
4,4'-DDT	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Acenaphthene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Acenaphthylene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Acetochlor	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Alachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
alpha-BHC	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
alpha-Chlordane	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Anthracene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:58	1
Atrazine	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Benz(a)anthracene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:58	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:58	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:58	1
beta-BHC	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60		ug/L		06/01/24 16:35	06/03/24 19:58	1
Bromacil	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Butachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Butylbenzylphthalate	<0.50		0.50		ug/L		06/01/24 16:35	06/03/24 19:58	1
Chlorobenzilate	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Chloroneb	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Lab Sample ID: 380-97851-3

Date Collected: 05/29/24 11:15
Matrix: Drinking Water

Date Received: 05/31/24 10:09
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Chrysene	<0.020		0.020		ug/L		06/01/24 16:35	06/03/24 19:58	1
delta-BHC	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Di(2-ethylhexyl)adipate	<0.60		0.60		ug/L		06/01/24 16:35	06/03/24 19:58	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Dieldrin	<0.20		0.20		ug/L		06/01/24 16:35	06/03/24 19:58	1
Diethylphthalate	<0.50		0.50		ug/L		06/01/24 16:35	06/03/24 19:58	1
Dimethylphthalate	<0.50		0.50		ug/L		06/01/24 16:35	06/03/24 19:58	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		06/01/24 16:35	06/03/24 19:58	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Endosulfan sulfate	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Endrin	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Endrin aldehyde	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
EPTC	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Fluoranthene	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Fluorene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
gamma-Chlordane	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Heptachlor	<0.040		0.040		ug/L		06/01/24 16:35	06/03/24 19:58	1
Heptachlor epoxide (isomer B)	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Hexachlorobenzene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Isophorone	<0.50		0.50		ug/L		06/01/24 16:35	06/03/24 19:58	1
Lindane	<0.040		0.040		ug/L		06/01/24 16:35	06/03/24 19:58	1
Malathion	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Methoxychlor	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Metolachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Molinate	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Naphthalene	<0.30		0.30		ug/L		06/01/24 16:35	06/03/24 19:58	1
Parathion	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Phenanthrene	<0.040		0.040		ug/L		06/01/24 16:35	06/03/24 19:58	1
Propachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Pyrene	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Simazine	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Terbacil	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Terbuthylazine	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1
Thiobencarb	<0.20		0.20		ug/L		06/01/24 16:35	06/03/24 19:58	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/01/24 16:35	06/03/24 19:58	1
trans-Nonachlor	<0.050		0.050		ug/L		06/01/24 16:35	06/03/24 19:58	1
Trifluralin	<0.099		0.099		ug/L		06/01/24 16:35	06/03/24 19:58	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexazinone	*0.11*		*ug/L*		*7.84*	*51235-04-2*	*06/01/24 16:35*	*06/03/24 19:58*	*1*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/01/24 16:35*	*06/03/24 19:58*	*1*

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Lab Sample ID: 380-97851-3
Matrix: Drinking Water
PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	103		70 - 130	06/01/24 16:35	06/03/24 19:58	1
Perylene-d12	97		70 - 130	06/01/24 16:35	06/03/24 19:58	1
Triphenylphosphate	88		70 - 130	06/01/24 16:35	06/03/24 19:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluorohexanesulfonic acid (PFHxS)	**2.2**		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluorooctanesulfonic acid (PFOS)	**2.6**		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluorooctanoic acid (PFOA)	**2.0**		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	81		50 - 200	06/02/24 13:14	06/03/24 17:17	1
13C6 PFDA	86		50 - 200	06/02/24 13:14	06/03/24 17:17	1
13C5 PFHxA	84		50 - 200	06/02/24 13:14	06/03/24 17:17	1
13C4 PFHpA	93		50 - 200	06/02/24 13:14	06/03/24 17:17	1
13C8 PFOA	90		50 - 200	06/02/24 13:14	06/03/24 17:17	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-97851-3

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

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*
13C9 PFNA	*87*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C7 PFUnA	*83*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C2 PFDoA	*78*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C4 PFBA	*90*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C5 PFPeA	*102*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C3 PFBS	*93*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C3 PFHxS	*104*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C8 PFOS	*96*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C2-4:2-FTS	*131*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C2-6:2-FTS	*141*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*1*
13C2-8:2-FTS	*108*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:17*	*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		06/01/24 08:01	06/02/24 20:57	1
Perfluorooctanesulfonic acid (PFOS)	**2.3**		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluorohexanoic acid (PFHxA)	**2.0**		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluorohexanesulfonic acid (PFHxS)	**2.2**		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 20:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*93*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:57*	*1*
13C2 PFHxA	*97*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:57*	*1*
13C2 PFDA	*98*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:57*	*1*
13C3-GenX	*93*		*70 - 130*	*06/01/24 08:01*	*06/02/24 20:57*	*1*

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-7

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*96*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C6 PFDA	*96*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C5 PFHxA	*100*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C4 PFHpA	*106*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C8 PFOA	*101*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C9 PFNA	*96*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C7 PFUnA	*95*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C2 PFDoA	*93*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C4 PFBA	*100*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C5 PFPeA	*105*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C3 PFBS	*101*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C3 PFHxS	*109*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-7

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Water

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 PFOS	*103*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C2-4:2-FTS	*129*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C2-6:2-FTS	*135*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*1*
13C2-8:2-FTS	*113*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:27*	*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		06/01/24 08:01	06/02/24 21:07	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/01/24 08:01	06/02/24 21:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*96*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:07*	*1*
13C2 PFHxA	*96*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:07*	*1*
13C2 PFDA	*100*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:07*	*1*
13C3-GenX	*94*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:07*	*1*

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-8

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Water

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/02/24 13:14	06/03/24 17:46	1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Lab Sample ID: 380-97851-8
Date Collected: 05/29/24 11:00
Matrix: Water
Date Received: 05/31/24 10:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*91*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C6 PFDA	*98*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C5 PFHxA	*99*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C4 PFHpA	*105*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C8 PFOA	*101*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C9 PFNA	*97*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C7 PFUnA	*95*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C2 PFDoA	*95*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C4 PFBA	*102*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C5 PFPeA	*108*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C3 PFBS	*95*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C3 PFHxS	*105*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C8 PFOS	*99*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C2-4:2-FTS	*125*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C2-6:2-FTS	*126*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*
13C2-8:2-FTS	*107*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:46*	*1*

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-8

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Water

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		06/01/24 08:01	06/02/24 21:16	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*90*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:16*	*1*
13C2 PFHxA	*89*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:16*	*1*
13C2 PFDA	*98*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:16*	*1*
13C3-GenX	*88*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:16*	*1*

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-97851-9

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)
Lab Sample ID: 380-97851-9
Date Collected: 05/29/24 11:15
Matrix: Water
Date Received: 05/31/24 10:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/02/24 13:14	06/03/24 17:56	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*91*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C6 PFDA	*97*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C5 PFHxA	*100*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C4 PFHpA	*105*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C8 PFOA	*100*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C9 PFNA	*95*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C7 PFUnA	*93*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C2 PFDoA	*91*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C4 PFBA	*97*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C5 PFPeA	*105*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C3 PFBS	*97*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C3 PFHxS	*108*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C8 PFOS	*98*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C2-4:2-FTS	*126*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C2-6:2-FTS	*124*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*1*
13C2-8:2-FTS	*109*		*50 - 200*	*06/02/24 13:14*	*06/03/24 17:56*	*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		06/01/24 08:01	06/02/24 21:26	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)
Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Lab Sample ID: 380-97851-9
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/01/24 08:01	06/02/24 21:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*101*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:26*	*1*
13C2 PFHxA	*100*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:26*	*1*
13C2 PFDA	*104*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:26*	*1*
13C3-GenX	*102*		*70 - 130*	*06/01/24 08:01*	*06/02/24 21:26*	*1*

Action Limit Summary

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.050		ug/L	2	0.050	525.2	Total/NA
Atrazine	<0.050		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	<0.099		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
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-2

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (Continued)

Lab Sample ID: 380-97851-2

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-97851-3

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.050		ug/L	2	0.050	525.2	Total/NA
Atrazine	<0.050		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	<0.099		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
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.2		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (Continued)

Lab Sample ID: 380-97851-3

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.3		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.2		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-7

Compliance Check

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

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

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-8

Compliance Check

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

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

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (Continued)

Lab Sample ID: 380-97851-8

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-97851-9

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-97851-1	AIEA GULCH WELLS PUMP 2 (	102	92	97
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	119	99	96
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	103	97	88

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**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
810-106147-B-1-A DU	Duplicate	107	86	95
810-106147-B-6-A MS	Matrix Spike	105	98	106
LCS 380-93149/23-A	Lab Control Sample	99	93	101
MB 380-93149/21-A	Method Blank	105	93	96
MRL 380-93149/22-A	Lab Control Sample	103	90	92

Surrogate Legend

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

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-97851-1	AIEA GULCH WELLS PUMP 2 (	90	99	95	96
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	96	104	97	96
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	93	97	98	93

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)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-97559-B-1-A MS	Matrix Spike	91	92	89	89

Surrogate Summary

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

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)
380-97559-C-1-A MSD	Matrix Spike Duplicate	88	92	93	90
380-97851-7	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	96	96	100	94
380-97851-8	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	90	89	98	88
380-97851-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	101	100	104	102
LCS 380-93126/24-A	Lab Control Sample	94	85	90	89
MBL 380-93126/22-A	Method Blank	83	89	84	86
MRL 380-93126/23-A	Lab Control Sample	82	86	92	84

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: 380-97851-1
SDG: 525.2, 533, 537.1

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

Matrix: Drinking Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-97851-1	AIEA GULCH WELLS PUMP 2 (	77	83	83	85	79	76	84	84
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	85	87	84	91	88	83	85	84
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	81	86	84	93	90	87	83	78

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-97851-1	AIEA GULCH WELLS PUMP 2 (	83	90	100	110	98	125	124	105
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	92	98	96	107	99	130	126	110
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	90	102	93	104	96	131	141	108

Surrogate Legend

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

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

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-97851-7	FB: AIEA GULCH WELLS PUMI	96	96	100	106	101	96	95	93
380-97851-8	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	91	98	99	105	101	97	95	95
380-97851-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	91	97	100	105	100	95	93	91
380-97952-B-1-A MS	Matrix Spike	98	89	92	99	93	87	85	81
380-97952-C-1-A MSD	Matrix Spike Duplicate	105	94	99	103	96	89	87	81
LCS 380-93161/24-A	Lab Control Sample	97	97	101	106	101	95	95	93
MBL 380-93161/22-A	Method Blank	103	97	102	111	105	96	94	94
MRL 380-93161/23-A	Lab Control Sample	96	92	101	105	98	89	87	87

Isotope Dilution Summary

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-97851-7	FB: AIEA GULCH WELLS PUMI	100	105	101	109	103	129	135	113
380-97851-8	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	102	108	95	105	99	125	126	107
380-97851-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	97	105	97	108	98	126	124	109
380-97952-B-1-A MS	Matrix Spike	100	146	105	112	100	141	128	105
380-97952-C-1-A MSD	Matrix Spike Duplicate	100	144	106	112	101	142	121	104
LCS 380-93161/24-A	Lab Control Sample	100	107	100	113	100	117	113	103
MBL 380-93161/22-A	Method Blank	103	105	99	111	103	117	124	104
MRL 380-93161/23-A	Lab Control Sample	96	104	101	112	97	120	118	99

Surrogate Legend

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

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

Lab Sample ID: MB 380-93149/21-A
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93149

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
2,4'-DDD	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
2,4'-DDE	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
2,4'-DDT	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
2-Methylnaphthalene	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
4,4'-DDD	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
4,4'-DDE	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
4,4'-DDT	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Acenaphthene	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Acenaphthylene	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Acetochlor	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Alachlor	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
alpha-BHC	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
alpha-Chlordane	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Anthracene	<0.019		0.019		ug/L		06/01/24 14:55	06/03/24 14:57	1
Atrazine	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Benzo[a]pyrene	<0.019		0.019		ug/L		06/01/24 14:55	06/03/24 14:57	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		06/01/24 14:55	06/03/24 14:57	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		06/01/24 14:55	06/03/24 14:57	1
beta-BHC	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		06/01/24 14:55	06/03/24 14:57	1
Bromacil	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Butachlor	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/01/24 14:55	06/03/24 14:57	1
Chlorobenzilate	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Chloroneb	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Chlorpyrifos	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Chrysene	<0.019		0.019		ug/L		06/01/24 14:55	06/03/24 14:57	1
delta-BHC	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		06/01/24 14:55	06/03/24 14:57	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Dieldrin	<0.19		0.19		ug/L		06/01/24 14:55	06/03/24 14:57	1
Diethylphthalate	<0.49		0.49		ug/L		06/01/24 14:55	06/03/24 14:57	1
Dimethylphthalate	<0.49		0.49		ug/L		06/01/24 14:55	06/03/24 14:57	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		06/01/24 14:55	06/03/24 14:57	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Endosulfan sulfate	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Endrin	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Endrin aldehyde	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
EPTC	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1

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

Lab Sample ID: MB 380-93149/21-A
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93149

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Fluorene	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
gamma-Chlordane	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Heptachlor	<0.039		0.039		ug/L		06/01/24 14:55	06/03/24 14:57	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Isophorone	<0.49		0.49		ug/L		06/01/24 14:55	06/03/24 14:57	1
Lindane	<0.039		0.039		ug/L		06/01/24 14:55	06/03/24 14:57	1
Malathion	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Methoxychlor	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Metolachlor	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Molinate	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Naphthalene	<0.29		0.29		ug/L		06/01/24 14:55	06/03/24 14:57	1
Parathion	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Phenanthrene	<0.039		0.039		ug/L		06/01/24 14:55	06/03/24 14:57	1
Propachlor	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Pyrene	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Simazine	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Terbacil	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Terbuthylazine	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1
Thiobencarb	<0.19		0.19		ug/L		06/01/24 14:55	06/03/24 14:57	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		06/01/24 14:55	06/03/24 14:57	1
trans-Nonachlor	<0.049		0.049		ug/L		06/01/24 14:55	06/03/24 14:57	1
Trifluralin	<0.097		0.097		ug/L		06/01/24 14:55	06/03/24 14:57	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentasiloxane, decamethyl-	*0.810*	*T J N*	*ug/L*		*2.66*	*541-02-6*	*06/01/24 14:55*	*06/03/24 14:57*	*1*
Cyclohexasiloxane, dodecamethyl-	*0.704*	*T J N*	*ug/L*		*3.21*	*540-97-6*	*06/01/24 14:55*	*06/03/24 14:57*	*1*
Unknown	*0.656*	*T J*	*ug/L*		*9.75*	*N/A*	*06/01/24 14:55*	*06/03/24 14:57*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*105*		*70 - 130*	*06/01/24 14:55*	*06/03/24 14:57*	*1*
Perylene-d12	*93*		*70 - 130*	*06/01/24 14:55*	*06/03/24 14:57*	*1*
Triphenylphosphate	*96*		*70 - 130*	*06/01/24 14:55*	*06/03/24 14:57*	*1*

Lab Sample ID: LCS 380-93149/23-A
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.95	2.18		ug/L		112	70 - 130
2,4'-DDD	1.95	2.25		ug/L		116	70 - 130
2,4'-DDE	1.95	2.21		ug/L		114	70 - 130
2,4'-DDT	1.95	2.13		ug/L		109	70 - 130
2,4-Dinitrotoluene	1.95	1.77		ug/L		91	70 - 130

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

Lab Sample ID: LCS 380-93149/23-A
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	1.95	1.98		ug/L		102	70 - 130
2-Methylnaphthalene	1.95	2.17		ug/L		112	70 - 130
4,4'-DDD	1.95	2.12		ug/L		109	70 - 130
4,4'-DDE	1.95	2.16		ug/L		111	70 - 130
4,4'-DDT	1.95	2.19		ug/L		113	70 - 130
Acenaphthene	1.95	2.12		ug/L		109	70 - 130
Acenaphthylene	1.95	2.14		ug/L		110	70 - 130
Acetochlor	1.95	2.05		ug/L		105	70 - 130
Alachlor	1.95	2.15		ug/L		110	70 - 130
alpha-BHC	1.95	2.04		ug/L		105	70 - 130
alpha-Chlordane	1.95	1.95		ug/L		100	70 - 130
Anthracene	1.95	1.37		ug/L		70	70 - 130
Atrazine	1.95	2.16		ug/L		111	70 - 130
Benz(a)anthracene	1.95	2.01		ug/L		103	70 - 130
Benzo[a]pyrene	1.95	1.67		ug/L		86	70 - 130
Benzo[b]fluoranthene	1.95	2.25		ug/L		115	70 - 130
Benzo[g,h,i]perylene	1.95	2.28		ug/L		117	70 - 130
Benzo[k]fluoranthene	1.95	2.42		ug/L		124	70 - 130
beta-BHC	1.95	2.18		ug/L		112	70 - 130
Bis(2-ethylhexyl) phthalate	1.95	2.38		ug/L		122	70 - 130
Bromacil	1.95	2.06		ug/L		106	70 - 130
Butachlor	1.95	2.27		ug/L		117	70 - 130
Butylbenzylphthalate	1.95	2.31		ug/L		119	70 - 130
Chlorobenzilate	1.95	2.09		ug/L		107	70 - 130
Chloroneb	1.95	2.06		ug/L		106	70 - 130
Chlorothalonil (Draconil, Bravo)	1.95	2.35		ug/L		120	70 - 130
Chlorpyrifos	1.95	2.10		ug/L		108	70 - 130
Chrysene	1.95	2.22		ug/L		114	70 - 130
delta-BHC	1.95	2.30		ug/L		118	70 - 130
Di(2-ethylhexyl)adipate	1.95	2.22		ug/L		114	70 - 130
Dibenz(a,h)anthracene	1.95	2.29		ug/L		117	70 - 130
Diclorvos (DDVP)	1.95	2.36		ug/L		121	70 - 130
Dieldrin	1.95	2.19		ug/L		112	70 - 130
Diethylphthalate	1.95	1.96		ug/L		101	70 - 130
Dimethylphthalate	1.95	2.17		ug/L		112	70 - 130
Di-n-butyl phthalate	3.90	4.55		ug/L		117	70 - 130
Di-n-octyl phthalate	1.95	2.13		ug/L		110	70 - 130
Endosulfan I (Alpha)	1.95	2.26		ug/L		116	70 - 130
Endosulfan II (Beta)	1.95	2.34		ug/L		120	70 - 130
Endosulfan sulfate	1.95	2.10		ug/L		108	70 - 130
Endrin	1.95	2.11		ug/L		108	70 - 130
Endrin aldehyde	1.95	1.76		ug/L		91	60 - 130
EPTC	1.95	2.34		ug/L		120	70 - 130
Fluoranthene	1.95	2.31		ug/L		118	70 - 130
Fluorene	1.95	2.18		ug/L		112	70 - 130
gamma-Chlordane	1.95	1.97		ug/L		101	70 - 130
Heptachlor	1.95	2.16		ug/L		111	70 - 130
Heptachlor epoxide (isomer B)	1.95	2.00		ug/L		103	70 - 130
Hexachlorobenzene	1.95	1.74		ug/L		89	70 - 130

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

Lab Sample ID: LCS 380-93149/23-A
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorocyclopentadiene	1.95	2.25		ug/L		115	70 - 130
Indeno[1,2,3-cd]pyrene	1.95	2.35		ug/L		121	70 - 130
Isophorone	1.95	2.23		ug/L		114	70 - 130
Lindane	1.95	2.21		ug/L		114	70 - 130
Malathion	1.95	2.06		ug/L		106	70 - 130
Methoxychlor	1.95	2.22		ug/L		114	70 - 130
Metolachlor	1.95	2.23		ug/L		115	70 - 130
Molinate	1.95	2.19		ug/L		112	70 - 130
Naphthalene	1.95	2.06		ug/L		106	70 - 130
Parathion	1.95	2.18		ug/L		112	70 - 130
Pendimethalin (Penoxaline)	1.95	2.16		ug/L		111	70 - 130
Phenanthrene	1.95	2.19		ug/L		112	70 - 130
Propachlor	1.95	2.04		ug/L		105	70 - 130
Pyrene	1.95	2.26		ug/L		116	70 - 130
Simazine	1.95	2.05		ug/L		105	70 - 130
Terbacil	1.95	1.98		ug/L		101	70 - 130
Terbuthylazine	1.95	2.09		ug/L		107	70 - 130
Thiobencarb	1.95	2.33		ug/L		119	70 - 130
trans-Nonachlor	1.95	2.07		ug/L		106	70 - 130
Trifluralin	1.95	1.93		ug/L		99	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*99*		*70 - 130*
Perylene-d12	*93*		*70 - 130*
Triphenylphosphate	*101*		*70 - 130*

Lab Sample ID: MRL 380-93149/22-A
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0970	0.115		ug/L		119	50 - 150
2,4'-DDD	0.0970	0.118		ug/L		122	50 - 150
2,4'-DDE	0.0970	0.111		ug/L		114	50 - 150
2,4'-DDT	0.0970	0.111		ug/L		115	50 - 150
2,4-Dinitrotoluene	0.0970	0.0805	J	ug/L		83	50 - 150
2,6-Dinitrotoluene	0.0970	0.108		ug/L		112	50 - 150
2-Methylnaphthalene	0.0970	0.108		ug/L		111	50 - 150
4,4'-DDD	0.0970	0.113		ug/L		117	50 - 150
4,4'-DDE	0.0970	0.0964	J	ug/L		99	50 - 150
4,4'-DDT	0.0970	0.110		ug/L		113	50 - 150
Acenaphthene	0.0970	0.0972		ug/L		100	50 - 150
Acenaphthylene	0.0970	0.0915	J	ug/L		94	50 - 150
Acetochlor	0.0485	0.0566	J	ug/L		117	50 - 150
Alachlor	0.0485	0.0501		ug/L		103	50 - 150
alpha-BHC	0.0970	0.0986		ug/L		102	50 - 150
alpha-Chlordane	0.0242	<0.028		ug/L		113	50 - 150
Anthracene	0.0194	<0.018		ug/L		59	50 - 150

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

Lab Sample ID: MRL 380-93149/22-A
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Atrazine	0.0485	<0.047		ug/L		87	50 - 150
Benz(a)anthracene	0.0485	0.0501		ug/L		103	50 - 150
Benzo[a]pyrene	0.0194	0.0151	J	ug/L		78	50 - 150
Benzo[b]fluoranthene	0.0194	0.0209		ug/L		108	50 - 150
Benzo[g,h,i]perylene	0.0485	0.0472	J	ug/L		97	50 - 150
Benzo[k]fluoranthene	0.0194	0.0214		ug/L		110	50 - 150
beta-BHC	0.0970	0.0945	J	ug/L		97	50 - 150
Bis(2-ethylhexyl) phthalate	0.582	0.703		ug/L		121	50 - 150
Bromacil	0.0970	0.112		ug/L		115	50 - 150
Butachlor	0.0485	0.0607		ug/L		125	50 - 150
Butylbenzylphthalate	0.145	0.151	J	ug/L		103	50 - 150
Chlorobenzilate	0.0970	0.0954	J	ug/L		98	50 - 150
Chloroneb	0.0970	0.0986		ug/L		102	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0970	0.0926	J	ug/L		95	50 - 150
Chlorpyrifos	0.0485	0.0539		ug/L		111	50 - 150
Chrysene	0.0194	0.0211		ug/L		109	50 - 150
delta-BHC	0.0970	0.113		ug/L		116	50 - 150
Di(2-ethylhexyl)adipate	0.291	0.295	J	ug/L		101	50 - 150
Dibenz(a,h)anthracene	0.0485	0.0418	J	ug/L		86	50 - 150
Diclorvos (DDVP)	0.0485	0.0656		ug/L		135	50 - 150
Dieldrin	0.0970	0.124	J	ug/L		128	50 - 150
Diethylphthalate	0.145	0.159	J	ug/L		110	50 - 150
Dimethylphthalate	0.291	0.308	J	ug/L		106	50 - 150
Di-n-butyl phthalate	0.291	0.363	J	ug/L		125	49 - 243
Di-n-octyl phthalate	0.0970	0.102		ug/L		106	50 - 150
Endosulfan I (Alpha)	0.0970	0.112		ug/L		116	50 - 150
Endosulfan II (Beta)	0.0970	0.139		ug/L		143	50 - 150
Endosulfan sulfate	0.0970	0.120		ug/L		123	50 - 150
Endrin	0.0970	0.0913	J	ug/L		94	50 - 150
Endrin aldehyde	0.0970	0.112		ug/L		116	50 - 150
EPTC	0.0970	0.102		ug/L		105	50 - 150
Fluoranthene	0.0485	0.0547	J	ug/L		113	50 - 150
Fluorene	0.0485	<0.048		ug/L		98	50 - 150
gamma-Chlordane	0.0242	0.0270	J	ug/L		111	50 - 150
Heptachlor	0.0388	0.0440		ug/L		113	50 - 150
Heptachlor epoxide (isomer B)	0.0485	0.0587		ug/L		121	50 - 150
Hexachlorobenzene	0.0485	0.0422	J	ug/L		87	50 - 150
Hexachlorocyclopentadiene	0.0485	0.0457	J	ug/L		94	50 - 150
Indeno[1,2,3-cd]pyrene	0.0485	0.0463	J	ug/L		95	50 - 150
Isophorone	0.0970	0.123	J	ug/L		127	50 - 150
Lindane	0.0388	0.0367	J	ug/L		95	50 - 150
Malathion	0.0970	0.109		ug/L		112	50 - 150
Methoxychlor	0.0970	0.107		ug/L		110	50 - 150
Metolachlor	0.0485	0.0603		ug/L		124	50 - 150
Molinate	0.0970	0.104		ug/L		107	50 - 150
Naphthalene	0.0970	0.113	J	ug/L		117	50 - 150
Parathion	0.0970	0.111		ug/L		115	50 - 150
Pendimethalin (Penoxaline)	0.0970	0.0890	J	ug/L		92	50 - 150
Phenanthrene	0.0194	0.0205	J	ug/L		106	50 - 150

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

Lab Sample ID: MRL 380-93149/22-A
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Propachlor	0.0485	0.0457	J	ug/L		94	50 - 150
Pyrene	0.0485	0.0535		ug/L		110	50 - 150
Simazine	0.0485	0.0430	J	ug/L		89	50 - 150
Terbacil	0.0970	0.121		ug/L		124	50 - 150
Terbuthylazine	0.0970	0.101		ug/L		104	50 - 150
Thiobencarb	0.0970	0.112	J	ug/L		115	50 - 150
trans-Nonachlor	0.0242	0.0326	J	ug/L		135	50 - 150
Trifluralin	0.0970	0.0923	J	ug/L		95	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*103*		*70 - 130*
Perylene-d12	*90*		*70 - 130*
Triphenylphosphate	*92*		*70 - 130*

Lab Sample ID: 810-106147-B-6-A MS
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.097		1.96	2.28		ug/L		117	70 - 130
2,4'-DDD	<0.097		1.96	2.36		ug/L		121	70 - 130
2,4'-DDE	<0.097		1.96	2.29		ug/L		117	70 - 130
2,4'-DDT	<0.097		1.96	2.20		ug/L		112	70 - 130
2,4-Dinitrotoluene	<0.097		1.96	1.76		ug/L		90	70 - 130
2,6-Dinitrotoluene	<0.097		1.96	1.71		ug/L		87	70 - 130
2-Methylnaphthalene	<0.097		1.96	2.29		ug/L		117	70 - 130
4,4'-DDD	<0.097		1.96	2.21		ug/L		113	70 - 130
4,4'-DDE	<0.097		1.96	2.20		ug/L		112	70 - 130
4,4'-DDT	<0.097		1.96	2.25		ug/L		115	70 - 130
Acenaphthene	<0.097		1.96	2.07		ug/L		106	70 - 130
Acenaphthylene	<0.097		1.96	2.08		ug/L		106	70 - 130
Acetochlor	<0.097		1.96	2.26		ug/L		115	70 - 130
Alachlor	<0.048		1.96	2.28		ug/L		117	70 - 130
alpha-BHC	<0.097		1.96	2.18		ug/L		111	70 - 130
alpha-Chlordane	<0.048		1.96	2.09		ug/L		107	70 - 130
Anthracene	<0.019		1.96	1.86		ug/L		95	70 - 130
Atrazine	<0.048		1.96	1.97		ug/L		100	70 - 130
Benz(a)anthracene	<0.048		1.96	2.23		ug/L		114	70 - 130
Benzo[a]pyrene	<0.019		1.96	2.02		ug/L		103	70 - 130
Benzo[b]fluoranthene	<0.019		1.96	2.27		ug/L		116	70 - 130
Benzo[g,h,i]perylene	<0.048		1.96	2.35		ug/L		120	70 - 130
Benzo[k]fluoranthene	<0.019		1.96	2.47		ug/L		126	70 - 130
beta-BHC	<0.097		1.96	2.27		ug/L		116	70 - 130
Bis(2-ethylhexyl) phthalate	<0.58		1.96	2.37		ug/L		121	70 - 130
Bromacil	<0.097		1.96	1.97		ug/L		101	70 - 130
Butachlor	<0.048		1.96	2.37		ug/L		121	70 - 130
Butylbenzylphthalate	<0.48		1.96	2.45		ug/L		125	70 - 130
Chlorobenzilate	<0.097		1.96	2.52		ug/L		129	70 - 130

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

Lab Sample ID: 810-106147-B-6-A MS
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloroneb	<0.097		1.96	1.85		ug/L		95	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.097		1.96	2.29		ug/L		117	70 - 130
Chlorpyrifos	<0.048		1.96	2.17		ug/L		111	70 - 130
Chrysene	<0.019		1.96	2.21		ug/L		113	70 - 130
delta-BHC	<0.097		1.96	2.37		ug/L		121	70 - 130
Di(2-ethylhexyl)adipate	<0.58		1.96	2.34		ug/L		120	70 - 130
Dibenz(a,h)anthracene	<0.048		1.96	2.47		ug/L		126	70 - 130
Diclorvos (DDVP)	<0.048		1.96	2.42		ug/L		123	70 - 130
Dieldrin	<0.19		1.96	2.30		ug/L		117	70 - 130
Diethylphthalate	<0.48		1.96	2.10		ug/L		107	70 - 130
Dimethylphthalate	<0.48		1.96	1.95		ug/L		100	70 - 130
Di-n-butyl phthalate	<0.97		3.92	4.84		ug/L		119	70 - 130
Di-n-octyl phthalate	<0.097		1.96	2.16		ug/L		110	70 - 130
Endosulfan I (Alpha)	<0.097		1.96	2.40		ug/L		123	70 - 130
Endosulfan II (Beta)	<0.097		1.96	2.41		ug/L		123	70 - 130
Endosulfan sulfate	<0.097		1.96	2.08		ug/L		106	70 - 130
Endrin	<0.097		1.96	2.00		ug/L		102	70 - 130
Endrin aldehyde	<0.097		1.96	1.70		ug/L		87	60 - 130
EPTC	<0.097		1.96	2.38		ug/L		122	70 - 130
Fluoranthene	<0.097		1.96	2.37		ug/L		121	70 - 130
Fluorene	<0.048		1.96	1.96		ug/L		100	70 - 130
gamma-Chlordane	<0.048		1.96	2.10		ug/L		107	70 - 130
Heptachlor	<0.039		1.96	2.40		ug/L		122	70 - 130
Heptachlor epoxide (isomer B)	<0.048		1.96	2.10		ug/L		107	70 - 130
Hexachlorobenzene	<0.048		1.96	1.76		ug/L		90	70 - 130
Hexachlorocyclopentadiene	<0.048		1.96	2.33		ug/L		119	70 - 130
Indeno[1,2,3-cd]pyrene	<0.048		1.96	2.44		ug/L		124	70 - 130
Isophorone	<0.48		1.96	2.36		ug/L		120	70 - 130
Lindane	<0.039		1.96	2.31		ug/L		118	70 - 130
Malathion	<0.097		1.96	2.16		ug/L		110	70 - 130
Methoxychlor	<0.097		1.96	2.18		ug/L		111	70 - 130
Metolachlor	<0.048		1.96	2.33		ug/L		119	70 - 130
Molinate	<0.097		1.96	1.93		ug/L		99	70 - 130
Naphthalene	<0.29		1.96	2.18		ug/L		111	70 - 130
Parathion	<0.097		1.96	2.33		ug/L		119	70 - 130
Pendimethalin (Penoxaline)	<0.097		1.96	2.23		ug/L		114	70 - 130
Phenanthrene	<0.039		1.96	2.18		ug/L		111	70 - 130
Propachlor	<0.048		1.96	2.31		ug/L		118	70 - 130
Pyrene	<0.048		1.96	2.35		ug/L		120	70 - 130
Simazine	<0.048		1.96	2.01		ug/L		102	70 - 130
Terbacil	<0.097		1.96	2.03		ug/L		103	70 - 130
Terbuthylazine	<0.097		1.96	2.01		ug/L		103	70 - 130
Thiobencarb	<0.19		1.96	2.31		ug/L		118	70 - 130
trans-Nonachlor	<0.048		1.96	2.16		ug/L		110	70 - 130
Trifluralin	<0.097		1.96	2.12		ug/L		108	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*105*		*70 - 130*

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

Lab Sample ID: 810-106147-B-6-A MS
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 93149

Surrogate	MS %Recovery	MS Qualifier	Limits
Perylene-d12	*98*		*70 - 130*
Triphenylphosphate	*106*		*70 - 130*

Lab Sample ID: 810-106147-B-1-A DU
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.10		<0.098		ug/L		NC	20
2,4'-DDD	<0.10		<0.098		ug/L		NC	20
2,4'-DDE	<0.10		<0.098		ug/L		NC	20
2,4'-DDT	<0.10		<0.098		ug/L		NC	20
2,4-Dinitrotoluene	<0.10		<0.098		ug/L		NC	20
2,6-Dinitrotoluene	<0.10		<0.098		ug/L		NC	20
2-Methylnaphthalene	<0.10		<0.098		ug/L		NC	20
4,4'-DDD	<0.10		<0.098		ug/L		NC	20
4,4'-DDE	<0.10		<0.098		ug/L		NC	20
4,4'-DDT	<0.10		<0.098		ug/L		NC	20
Acenaphthene	<0.10		<0.098		ug/L		NC	20
Acenaphthylene	<0.10		<0.098		ug/L		NC	20
Acetochlor	<0.10		<0.098		ug/L		NC	20
Alachlor	<0.050		<0.049		ug/L		NC	20
alpha-BHC	<0.10		<0.098		ug/L		NC	20
alpha-Chlordane	<0.050		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.050		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.050		<0.049		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		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.10		<0.098		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.60		<0.59		ug/L		NC	20
Bromacil	<0.10		<0.098		ug/L		NC	20
Butachlor	<0.050		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.50		<0.49		ug/L		NC	20
Chlorobenzilate	<0.10		<0.098		ug/L		NC	20
Chloroneb	<0.10		<0.098		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.10		<0.098		ug/L		NC	20
Chlorpyrifos	<0.050		<0.049		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.10		<0.098		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.60		<0.59		ug/L		NC	20
Dibenz(a,h)anthracene	<0.050		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.050		<0.049		ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.50		<0.49		ug/L		NC	20
Dimethylphthalate	<0.50		<0.49		ug/L		NC	20

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

Lab Sample ID: 810-106147-B-1-A DU
Matrix: Water
Analysis Batch: 93298

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 93149

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Di-n-butyl phthalate	<1.0			<0.98		ug/L				NC	20
Di-n-octyl phthalate	<0.10			<0.098		ug/L				NC	20
Endosulfan I (Alpha)	<0.10			<0.098		ug/L				NC	20
Endosulfan II (Beta)	<0.10			<0.098		ug/L				NC	20
Endosulfan sulfate	<0.10			<0.098		ug/L				NC	20
Endrin	<0.10			<0.098		ug/L				NC	20
Endrin aldehyde	<0.10			<0.098		ug/L				NC	20
EPTC	<0.10			<0.098		ug/L				NC	20
Fluoranthene	<0.10			<0.098		ug/L				NC	20
Fluorene	<0.050			<0.049		ug/L				NC	20
gamma-Chlordane	<0.050			<0.049		ug/L				NC	20
Heptachlor	<0.040			<0.039		ug/L				NC	20
Heptachlor epoxide (isomer B)	<0.050			<0.049		ug/L				NC	20
Hexachlorobenzene	<0.050			<0.049		ug/L				NC	20
Hexachlorocyclopentadiene	<0.050			<0.049		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	<0.050			<0.049		ug/L				NC	20
Isophorone	<0.50			<0.49		ug/L				NC	20
Lindane	<0.040			<0.039		ug/L				NC	20
Malathion	<0.10			<0.098		ug/L				NC	20
Methoxychlor	<0.10			<0.098		ug/L				NC	20
Metolachlor	<0.050			<0.049		ug/L				NC	20
Molinate	<0.10			<0.098		ug/L				NC	20
Naphthalene	<0.30			<0.29		ug/L				NC	20
Parathion	<0.10			<0.098		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.10			<0.098		ug/L				NC	20
Phenanthrene	<0.040			<0.039		ug/L				NC	20
Propachlor	<0.050			<0.049		ug/L				NC	20
Pyrene	<0.050			<0.049		ug/L				NC	20
Simazine	<0.050			<0.049		ug/L				NC	20
Terbacil	<0.10			<0.098		ug/L				NC	20
Terbuthylazine	<0.10			<0.098		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			<0.049		ug/L				NC	20
Trifluralin	<0.10			<0.098		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*107*		*70 - 130*
Perylene-d12	*86*		*70 - 130*
Triphenylphosphate	*95*		*70 - 130*

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

Lab Sample ID: MBL 380-93161/22-A
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93161

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		06/02/24 13:14	06/03/24 15:13	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*103*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C6 PFDA	*97*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C5 PFHxA	*102*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C4 PFHpA	*111*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C8 PFOA	*105*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C9 PFNA	*96*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C7 PFUnA	*94*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C2 PFDoA	*94*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C4 PFBA	*103*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C5 PFPeA	*105*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C3 PFBS	*99*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*
13C3 PFHxS	*111*		*50 - 200*	*06/02/24 13:14*	*06/03/24 15:13*	*1*

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

Lab Sample ID: MBL 380-93161/22-A
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93161

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	103		50 - 200	06/02/24 13:14	06/03/24 15:13	1
13C2-4:2-FTS	117		50 - 200	06/02/24 13:14	06/03/24 15:13	1
13C2-6:2-FTS	124		50 - 200	06/02/24 13:14	06/03/24 15:13	1
13C2-8:2-FTS	104		50 - 200	06/02/24 13:14	06/03/24 15:13	1

Lab Sample ID: LCS 380-93161/24-A
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	57.6		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	58.0		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	56.3		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	61.7		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	62.7		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	59.1		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	59.6		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	57.4		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	58.3		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	57.5		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	60.2	60.2		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	58.9		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	61.1		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	59.6		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	60.0		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	62.1		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	60.8		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	63.2		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	51.5		ng/L		86	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	59.8		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	62.1		ng/L		103	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	57.2		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	55.6		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	63.6		ng/L		106	70 - 130

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

Lab Sample ID: LCS 380-93161/24-A
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93161

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			60.2	54.2		ng/L		90	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*97*		*50 - 200*
13C6 PFDA	*97*		*50 - 200*
13C5 PFHxA	*101*		*50 - 200*
13C4 PFHpA	*106*		*50 - 200*
13C8 PFOA	*101*		*50 - 200*
13C9 PFNA	*95*		*50 - 200*
13C7 PFUnA	*95*		*50 - 200*
13C2 PFDoA	*93*		*50 - 200*
13C4 PFBA	*100*		*50 - 200*
13C5 PFPeA	*107*		*50 - 200*
13C3 PFBS	*100*		*50 - 200*
13C3 PFHxS	*113*		*50 - 200*
13C8 PFOS	*100*		*50 - 200*
13C2-4:2-FTS	*117*		*50 - 200*
13C2-6:2-FTS	*113*		*50 - 200*
13C2-8:2-FTS	*103*		*50 - 200*

Lab Sample ID: MRL 380-93161/23-A
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93161

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.00	2.19	J	ng/L		109	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			2.00	2.15	J	ng/L		107	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	1.99	J	ng/L		99	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			2.00	2.28	J	ng/L		114	50 - 150		
Perfluorodecanoic acid (PFDA)			2.00	2.16	J	ng/L		108	50 - 150		
Perfluorododecanoic acid (PFDoA)			2.00	2.22	J	ng/L		111	50 - 150		
Perfluoroheptanoic acid (PFHpA)			2.00	2.22	J	ng/L		111	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			2.00	2.09	J	ng/L		104	50 - 150		
Perfluorohexanoic acid (PFHxA)			2.00	2.11	J	ng/L		105	50 - 150		
Perfluorononanoic acid (PFNA)			2.00	2.17	J	ng/L		108	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			2.00	2.30	J	ng/L		115	50 - 150		
Perfluorooctanoic acid (PFOA)			2.00	2.30	J	ng/L		115	50 - 150		
Perfluoroundecanoic acid (PFUnA)			2.00	2.29	J	ng/L		114	50 - 150		
Perfluorobutanoic acid (PFBA)			2.00	2.19	J	ng/L		109	50 - 150		

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

Lab Sample ID: MRL 380-93161/23-A
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93161

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.28	J	ng/L		114	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.24	J	ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.48	J	ng/L		124	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.01	J	ng/L		100	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.30	J	ng/L		115	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.98	J	ng/L		99	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*96*		*50 - 200*
13C6 PFDA	*92*		*50 - 200*
13C5 PFHxA	*101*		*50 - 200*
13C4 PFHpA	*105*		*50 - 200*
13C8 PFOA	*98*		*50 - 200*
13C9 PFNA	*89*		*50 - 200*
13C7 PFUnA	*87*		*50 - 200*
13C2 PFDoA	*87*		*50 - 200*
13C4 PFBA	*96*		*50 - 200*
13C5 PFPeA	*104*		*50 - 200*
13C3 PFBS	*101*		*50 - 200*
13C3 PFHxS	*112*		*50 - 200*
13C8 PFOS	*97*		*50 - 200*
13C2-4:2-FTS	*120*		*50 - 200*
13C2-6:2-FTS	*118*		*50 - 200*
13C2-8:2-FTS	*99*		*50 - 200*

Lab Sample ID: 380-97952-B-1-A MS
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 93161

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.4	59.9		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	61.1		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	55.5		ng/L		92	70 - 130

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

Lab Sample ID: 380-97952-B-1-A MS
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 93161

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		60.4	56.8		ng/L		94	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	65.0		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	59.6		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	60.4		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	57.5		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	59.8		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	61.4		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	62.1		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.3		60.4	62.6		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	61.0		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	61.0		ng/L		101	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	59.9		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	61.7		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	62.6		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	59.2		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	57.7		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	61.5		ng/L		102	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	70.4		ng/L		117	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	59.7		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	54.0		ng/L		89	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	63.4		ng/L		105	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	58.9		ng/L		98	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*98*		*50 - 200*
13C6 PFDA	*89*		*50 - 200*
13C5 PFHxA	*92*		*50 - 200*
13C4 PFHpA	*99*		*50 - 200*
13C8 PFOA	*93*		*50 - 200*
13C9 PFNA	*87*		*50 - 200*
13C7 PFUnA	*85*		*50 - 200*
13C2 PFDoA	*81*		*50 - 200*
13C4 PFBA	*100*		*50 - 200*
13C5 PFPeA	*146*		*50 - 200*
13C3 PFBS	*105*		*50 - 200*
13C3 PFHxS	*112*		*50 - 200*
13C8 PFOS	*100*		*50 - 200*

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

Lab Sample ID: 380-97952-B-1-A MS
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 93161

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	141		50 - 200
13C2-6:2-FTS	128		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: 380-97952-C-1-A MSD
Matrix: Water
Analysis Batch: 93310

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 93161

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	58.4		ng/L		97	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	59.0		ng/L		98	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	55.1		ng/L		92	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	57.1		ng/L		95	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	61.4		ng/L		100	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	59.1		ng/L		98	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	62.4		ng/L		104	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	57.5		ng/L		96	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	60.5		ng/L		99	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	58.7		ng/L		97	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	61.1		ng/L		101	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	2.3		60.2	62.4		ng/L		100	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	63.8		ng/L		104	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	60.1		ng/L		100	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	61.4		ng/L		102	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	64.8		ng/L		108	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	61.6		ng/L		102	70 - 130	2	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	59.7		ng/L		99	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	49.7		ng/L		82	70 - 130	15	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	58.7		ng/L		97	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	71.9		ng/L		119	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	59.5		ng/L		99	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	55.3		ng/L		92	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	64.0		ng/L		106	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	56.2		ng/L		93	70 - 130	5	30

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	105		50 - 200
13C6 PFDA	94		50 - 200
13C5 PFHxA	99		50 - 200
13C4 PFHpA	103		50 - 200
13C8 PFOA	96		50 - 200
13C9 PFNA	89		50 - 200
13C7 PFUnA	87		50 - 200
13C2 PFDoA	81		50 - 200
13C4 PFBA	100		50 - 200
13C5 PFPeA	144		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	112		50 - 200
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	142		50 - 200
13C2-6:2-FTS	121		50 - 200
13C2-8:2-FTS	104		50 - 200

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

Lab Sample ID: MBL 380-93126/22-A
Matrix: Water
Analysis Batch: 93167

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93126

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		06/01/24 08:01	06/02/24 17:39	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	83		70 - 130	06/01/24 08:01	06/02/24 17:39	1
13C2 PFHxA	89		70 - 130	06/01/24 08:01	06/02/24 17:39	1
13C2 PFDA	84		70 - 130	06/01/24 08:01	06/02/24 17:39	1

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

Lab Sample ID: MBL 380-93126/22-A
Matrix: Water
Analysis Batch: 93167

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93126

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	86		70 - 130	06/01/24 08:01	06/02/24 17:39	1

Lab Sample ID: LCS 380-93126/24-A
Matrix: Water
Analysis Batch: 93167

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.0	48.7		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.0	52.1		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.0	54.1		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.0	57.2		ng/L		114	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.0	56.1		ng/L		112	70 - 130
Perfluorohexanoic acid (PFHxA)	50.0	48.8		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	50.0	50.5		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	50.0	52.1		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	50.0	52.7		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.0	54.7		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.0	46.2		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.0	52.8		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	50.0	51.2		ng/L		102	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.0	48.3		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.0	50.6		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.0	52.4		ng/L		105	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.0	52.6		ng/L		105	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.0	57.0		ng/L		114	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	94		70 - 130
13C2 PFHxA	85		70 - 130
13C2 PFDA	90		70 - 130
13C3-GenX	89		70 - 130

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

Lab Sample ID: MRL 380-93126/23-A
Matrix: Water
Analysis Batch: 93167

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93126

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.01	J	ng/L		100	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.03	J	ng/L		101	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.33	J	ng/L		116	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.28	J	ng/L		114	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.78	J	ng/L		89	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.32	J	ng/L		116	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.00	J	ng/L		100	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.96	J	ng/L		98	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.33	J	ng/L		116	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*82*		*70 - 130*
13C2 PFHxA	*86*		*70 - 130*
13C2 PFDA	*92*		*70 - 130*
13C3-GenX	*84*		*70 - 130*

Lab Sample ID: 380-97559-B-1-A MS
Matrix: Water
Analysis Batch: 93167

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 93126

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		25.4	27.0		ng/L		106	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.7		25.4	30.5		ng/L		110	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.4	30.7		ng/L		121	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.4	28.8		ng/L		113	70 - 130

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

Lab Sample ID: 380-97559-B-1-A MS
Matrix: Water
Analysis Batch: 93167

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 93126

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.4	29.7		ng/L		117	70 - 130
Perfluorohexanoic acid (PFHxA)	3.9		25.4	32.3		ng/L		112	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.4	27.4		ng/L		108	70 - 130
Perfluorooctanoic acid (PFOA)	3.4		25.4	31.1		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.4	28.7		ng/L		113	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.4	29.8		ng/L		112	70 - 130
Perfluorobutanesulfonic acid (PFBS)	2.8		25.4	30.2		ng/L		108	70 - 130
Perfluoroheptanoic acid (PFHpA)	2.1		25.4	29.2		ng/L		107	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.4	28.7		ng/L		110	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.4	26.5		ng/L		104	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.4	27.1		ng/L		107	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.4	26.3		ng/L		104	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.4	26.7		ng/L		105	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.4	29.2		ng/L		115	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*91*		*70 - 130*
13C2 PFHxA	*92*		*70 - 130*
13C2 PFDA	*89*		*70 - 130*
13C3-GenX	*89*		*70 - 130*

Lab Sample ID: 380-97559-C-1-A MSD
Matrix: Water
Analysis Batch: 93167

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 93126

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		26.1	27.9		ng/L		107	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	2.7		26.1	30.4		ng/L		106	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		26.1	29.7		ng/L		114	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		26.1	27.5		ng/L		105	70 - 130	4	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		26.1	28.9		ng/L		111	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	3.9		26.1	33.3		ng/L		113	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		26.1	27.5		ng/L		105	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	3.4		26.1	31.9		ng/L		109	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		26.1	28.9		ng/L		111	70 - 130	1	30

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

Lab Sample ID: 380-97559-C-1-A MSD
Matrix: Water
Analysis Batch: 93167

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 93126

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		26.1	29.8		ng/L		109	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	2.8		26.1	30.3		ng/L		105	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	2.1		26.1	29.6		ng/L		105	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		26.1	28.9		ng/L		108	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		26.1	26.7		ng/L		102	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		26.1	27.3		ng/L		105	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		26.1	26.9		ng/L		103	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		26.1	26.5		ng/L		101	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		26.1	29.1		ng/L		111	70 - 130	0	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*88*		*70 - 130*
13C2 PFHxA	*92*		*70 - 130*
13C2 PFDA	*93*		*70 - 130*
13C3-GenX	*90*		*70 - 130*

GC/MS Semi VOA

Prep Batch: 93149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	525.2	
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	
MB 380-93149/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-93149/23-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-93149/22-A	Lab Control Sample	Total/NA	Water	525.2	
810-106147-B-6-A MS	Matrix Spike	Total/NA	Water	525.2	
810-106147-B-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 93298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	93149
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	525.2	93149
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	93149
MB 380-93149/21-A	Method Blank	Total/NA	Water	525.2	93149
LCS 380-93149/23-A	Lab Control Sample	Total/NA	Water	525.2	93149
MRL 380-93149/22-A	Lab Control Sample	Total/NA	Water	525.2	93149
810-106147-B-6-A MS	Matrix Spike	Total/NA	Water	525.2	93149
810-106147-B-1-A DU	Duplicate	Total/NA	Water	525.2	93149

LCMS

Prep Batch: 93126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	537.1 DW	
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	
380-97851-7	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP(	Total/NA	Water	537.1 DW	
380-97851-8	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP	Total/NA	Water	537.1 DW	
380-97851-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	537.1 DW	
MBL 380-93126/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-93126/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-93126/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-97559-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-97559-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 93161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	533	
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	
380-97851-7	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP(	Total/NA	Water	533	
380-97851-8	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP	Total/NA	Water	533	
380-97851-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	533	
MBL 380-93161/22-A	Method Blank	Total/NA	Water	533	
LCS 380-93161/24-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-93161/23-A	Lab Control Sample	Total/NA	Water	533	
380-97952-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-97952-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

LCMS

Analysis Batch: 93167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	93126
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	537.1	93126
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	93126
380-97851-7	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP(	Total/NA	Water	537.1	93126
380-97851-8	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP	Total/NA	Water	537.1	93126
380-97851-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	537.1	93126
MBL 380-93126/22-A	Method Blank	Total/NA	Water	537.1	93126
LCS 380-93126/24-A	Lab Control Sample	Total/NA	Water	537.1	93126
MRL 380-93126/23-A	Lab Control Sample	Total/NA	Water	537.1	93126
380-97559-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	93126
380-97559-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	93126

Analysis Batch: 93310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	93161
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	533	93161
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	93161
380-97851-7	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP(	Total/NA	Water	533	93161
380-97851-8	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP	Total/NA	Water	533	93161
380-97851-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	533	93161
MBL 380-93161/22-A	Method Blank	Total/NA	Water	533	93161
LCS 380-93161/24-A	Lab Control Sample	Total/NA	Water	533	93161
MRL 380-93161/23-A	Lab Control Sample	Total/NA	Water	533	93161
380-97952-B-1-A MS	Matrix Spike	Total/NA	Water	533	93161
380-97952-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	93161

Lab Chronicle

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-1

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			93149	IQ42	EA POM	06/01/24 16:35
Total/NA	Analysis	525.2		1	93298	UPAC	EA POM	06/03/24 19:18
Total/NA	Prep	533			93161	E9PK	EA POM	06/02/24 13:14
Total/NA	Analysis	533		1	93310	SZ9R	EA POM	06/03/24 16:58
Total/NA	Prep	537.1 DW			93126	SL5Q	EA POM	06/01/24 08:01
Total/NA	Analysis	537.1		1	93167	SZ9R	EA POM	06/02/24 20:38

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-2

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			93149	IQ42	EA POM	06/01/24 16:35
Total/NA	Analysis	525.2		1	93298	UPAC	EA POM	06/03/24 19:38
Total/NA	Prep	533			93161	E9PK	EA POM	06/02/24 13:14
Total/NA	Analysis	533		1	93310	SZ9R	EA POM	06/03/24 17:08
Total/NA	Prep	537.1 DW			93126	SL5Q	EA POM	06/01/24 08:01
Total/NA	Analysis	537.1		1	93167	SZ9R	EA POM	06/02/24 20:47

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-97851-3

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			93149	IQ42	EA POM	06/01/24 16:35
Total/NA	Analysis	525.2		1	93298	UPAC	EA POM	06/03/24 19:58
Total/NA	Prep	533			93161	E9PK	EA POM	06/02/24 13:14
Total/NA	Analysis	533		1	93310	SZ9R	EA POM	06/03/24 17:17
Total/NA	Prep	537.1 DW			93126	SL5Q	EA POM	06/01/24 08:01
Total/NA	Analysis	537.1		1	93167	SZ9R	EA POM	06/02/24 20:57

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-7

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			93161	E9PK	EA POM	06/02/24 13:14
Total/NA	Analysis	533		1	93310	SZ9R	EA POM	06/03/24 17:27
Total/NA	Prep	537.1 DW			93126	SL5Q	EA POM	06/01/24 08:01
Total/NA	Analysis	537.1		1	93167	SZ9R	EA POM	06/02/24 21:07

Lab Chronicle

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-8

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			93161	E9PK	EA POM	06/02/24 13:14
Total/NA	Analysis	533		1	93310	SZ9R	EA POM	06/03/24 17:46
Total/NA	Prep	537.1 DW			93126	SL5Q	EA POM	06/01/24 08:01
Total/NA	Analysis	537.1		1	93167	SZ9R	EA POM	06/02/24 21:16

Client Sample ID: FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-97851-9

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			93161	E9PK	EA POM	06/02/24 13:14
Total/NA	Analysis	533		1	93310	SZ9R	EA POM	06/03/24 17:56
Total/NA	Prep	537.1 DW			93126	SL5Q	EA POM	06/01/24 08:01
Total/NA	Analysis	537.1		1	93167	SZ9R	EA POM	06/02/24 21:26

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

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	01-31-25

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	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	beta-BHC
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	delta-BHC
525.2	525.2	Drinking Water	Diclorvos (DDVP)
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	gamma-Chlordane
525.2	525.2	Drinking Water	Isophorone
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbuthylazine
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor

Method Summary

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
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

Laboratory References:

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

Sample Summary

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

Job ID: 380-97851-1
SDG: 525.2, 533, 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	05/29/24 10:40	05/31/24 10:09	HI0000331
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	05/29/24 11:00	05/31/24 10:09	HI0000331
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	05/29/24 11:15	05/31/24 10:09	HI0000331
380-97851-7	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	05/29/24 10:40	05/31/24 10:09	
380-97851-8	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	05/29/24 11:00	05/31/24 10:09	
380-97851-9	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Water	05/29/24 11:15	05/31/24 10:09	

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

Chain of Custody Record

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Client Information	Sampler: MSHIELDS AT PA	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27984-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

380-97851 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges: C10-C24/C24-C36/C6-C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	A	Q		Y	N		
MOANALUA WELLS				Water			2	4	2	2	DID NOT REC			chlorinated
AIEA GULCH WELLS PUMP2	29-May-2024	1040		Water			2	4	2	2	3	3		chlorinated
AIEA WELLS PUMPS 1&2 (260)	29-May-2024	1100		Water			2	4	2	2	3	3		
HALAWA WELLS UNITS 1&2	29-May-2024	1115		Water			2	4	2	2	3	3		
TB MOANALUA WELLS				Water				2			DID NOT RUN			
TB AIEA GULCH WELLS PUMP2	29-May-2024	1040		Water				2			1	1		
TB AIEA WELLS PUMPS 1&2 (260)	29-May-2024	1100		Water				2			1	1		
TB HALAWA WELLS UNITS 1&2	29-May-2024	1115		Water				2			1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 5/29/24 1210	Company HBWS	Received by:	Date/Time: 5/31/24 1007	Company FEDEX
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: 3A 3.1-0.1 = 3.0 GEL

ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 30MAY24
ACTWGT: 50.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
INV:
PO: DEPT:

583J4/C450/9AE3

FedEx Express

J2202403260luv

3 of 5

MPS# 0263 7766 2922 8188
Mstr# 7766 2922 8166

FRI - 31 MAY 10:30A
PRIORITY OVERNIGHT

0201

91768
ONT
CA-US

WM ONTA

After printing this label:
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ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 30MAY24
ACTWGT: 50.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
INV:
PO: DEPT:

583J4/C456/9AE3

FedEx Express

J242824932601uv

1 of 5

FRI - 31 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7766 2922 8166
MASTER

WM ONTA

91768
CA-US ONT

631A 3.7-0.1 = 3.6 ±CE

5/31/24 0955

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 30MAY24
ACTWGT: 50.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
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PO: DEPT:

583J4/C458/9AE3

FedEx Express

J24202403201uv

5 of 5
MPS# 0263 7766 2922 8203
Mstr# 7766 2922 8166

FRI - 31 MAY 10:30A
PRIORITY OVERNIGHT

0201

WM ONTA

91768
CA-US ONT

27 - 0.2 = 2.5 (630A) Gel Frozen

Danni 5-30-24 10:09 FEAT

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

Chain of Custody Record

eurofins | Envir

Loc: 380
97851

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-128718.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.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 #: 380-97851-1
Address: 2841 Dow Avenue, Suite 100, ,	Due Date Requested: 6/20/2024			Preservation Codes: -
City: Tustin	TAT Requested (days):			
State, Zip: CA, 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			Other:

380-97851 Chain of Custody

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO_LL_CS/3510C_LL HNL Ranges: C10-C24/C24-C36/C8-C18	8015B_GRO_LL/5030C (MOD) GRO	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-97851-1)	5/29/24	10:40 Hawaiian		Water			X	X	6	initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-97851-2)	5/29/24	11:00 Hawaiian		Water			X	X	6	initial volume (500ml) and final volume (2ml). MRLs are needed.
HALAWA SHAFT (331-241-TP401) (380-97851-3)	5/29/24	11:15 Hawaiian		Water			X	X	6	initial volume (500ml) and final volume (2ml). MRLs are needed.
TB:AIEA GULCH WELLS P2 (331-202-TP072) (380-97851-4)	5/29/24	10:40 Hawaiian		Water				X	2	MRLs are needed.
TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-9785	5/29/24	11:00 Hawaiian		Water				X	2	MRLs are needed.
TB: HALAWA WELLS UNITS 1&2 (331-206-TP065) (380-97851-6	5/29/24	11:15 Hawaiian		Water				X	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.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *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:	Date/Time:	Company	Received by:	Date/Time:	Company
Mohamad Mark Urrutia	5/31/24 1500	EEAP		5/31/24 1500	EEC
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: 2.9/2.3 SC/22

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-97851-1
SDG Number: 525.2, 533, 537.1

Login Number: 97851
List Number: 1
Creator: Sanchez Velasquez, Gustavo

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

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

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 [SUBCONTRACT]
625, 8015
RUSH Weekly Red Hill

JOB NUMBER

380-97851-2

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

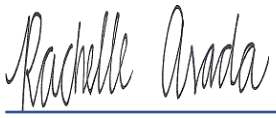
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-97851-2
SDG: 625, 8015

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased

Glossary

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

Job ID: 380-97851-2 — Eurofins Eaton Analytical Pomona

Job Narrative
380-97851-2

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 5/31/2024 10:09 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 2.5°C and 3.0°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.

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

Diesel Range Organics
Method 8015B_DRO_LL_CS: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-447569. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8015B_DRO_LL_CS: The method reporting limit check (MRL) for preparation batch 570-447569 and analytical batch 570-452200 recovered outside control limits for the following analytes: C10-C28. These analytes were biased high in the MRL and were not detected in the associated samples; therefore, the data have been reported.

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

Detection Summary

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

Job ID: 380-97851-2
SDG: 625, 8015

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Lab Sample ID: 380-97851-1

PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Lab Sample ID: 380-97851-2

PWSID Number: HI0000331

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Lab Sample ID: 380-97851-3

PWSID Number: HI0000331

No Detections.

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)
Lab Sample ID: 380-97851-4

No Detections.

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)
Lab Sample ID: 380-97851-5

No Detections.

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)
Lab Sample ID: 380-97851-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-1

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Drinking Water
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			06/07/24 20:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*38 - 134*		*06/07/24 20:33*	*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)	<26		26		ug/L		06/04/24 20:06	06/19/24 01:11	1
Motor Oil Range Organics [C24-C36]	<26		26		ug/L		06/04/24 20:06	06/19/24 01:11	1
C8-C18	<26		26		ug/L		06/04/24 20:06	06/19/24 01:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*68*		*60 - 130*	*06/04/24 20:06*	*06/19/24 01:11*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Acenaphthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Biphenyl	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Chrysene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/04/24 00:00	06/24/24 14:36	1
Fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Fluorene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Naphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Perylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Phenanthrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1
Pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 14:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*47*		*27 - 133*	*06/04/24 00:00*	*06/24/24 14:36*	*1*
(d10-Phenanthrene)	*54*		*43 - 129*	*06/04/24 00:00*	*06/24/24 14:36*	*1*
(d12-Chrysene)	*77*		*52 - 144*	*06/04/24 00:00*	*06/24/24 14:36*	*1*
(d12-Perylene)	*101*		*36 - 161*	*06/04/24 00:00*	*06/24/24 14:36*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-1

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Drinking Water
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d8-Naphthalene)	*43*		*25 - 125*	*06/04/24 00:00*	*06/24/24 14:36*	*1*

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-2

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Drinking Water
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			06/07/24 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*38 - 134*		*06/07/24 21:00*	*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)	<26		26		ug/L		06/04/24 20:06	06/19/24 01:32	1
Motor Oil Range Organics [C24-C36]	<26		26		ug/L		06/04/24 20:06	06/19/24 01:32	1
C8-C18	<26		26		ug/L		06/04/24 20:06	06/19/24 01:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*72*		*60 - 130*	*06/04/24 20:06*	*06/19/24 01:32*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Acenaphthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Biphenyl	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Chrysene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/04/24 00:00	06/24/24 16:24	1
Fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Fluorene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Naphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-2

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Drinking Water
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Phenanthrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1
Pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*55*		*27 - 133*	*06/04/24 00:00*	*06/24/24 16:24*	*1*
(d10-Phenanthrene)	*61*		*43 - 129*	*06/04/24 00:00*	*06/24/24 16:24*	*1*
(d12-Chrysene)	*74*		*52 - 144*	*06/04/24 00:00*	*06/24/24 16:24*	*1*
(d12-Perylene)	*88*		*36 - 161*	*06/04/24 00:00*	*06/24/24 16:24*	*1*
(d8-Naphthalene)	*49*		*25 - 125*	*06/04/24 00:00*	*06/24/24 16:24*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-97851-3

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Matrix: Drinking Water
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			06/07/24 22:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*38 - 134*		*06/07/24 22:05*	*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)	<27		27		ug/L		06/04/24 20:06	06/19/24 01:53	1
Motor Oil Range Organics [C24-C36]	<27		27		ug/L		06/04/24 20:06	06/19/24 01:53	1
C8-C18	<27		27		ug/L		06/04/24 20:06	06/19/24 01:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*79*		*60 - 130*	*06/04/24 20:06*	*06/19/24 01:53*	*1*

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Acenaphthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Biphenyl	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Chrysene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-97851-3

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Matrix: Drinking Water
PWSID Number: HI0000331

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/04/24 00:00	06/24/24 18:12	1
Fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Fluorene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Naphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Perylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Phenanthrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1
Pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/24/24 18:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*52*		*27 - 133*	*06/04/24 00:00*	*06/24/24 18:12*	*1*
(d10-Phenanthrene)	*60*		*43 - 129*	*06/04/24 00:00*	*06/24/24 18:12*	*1*
(d12-Chrysene)	*63*		*52 - 144*	*06/04/24 00:00*	*06/24/24 18:12*	*1*
(d12-Perylene)	*80*		*36 - 161*	*06/04/24 00:00*	*06/24/24 18:12*	*1*
(d8-Naphthalene)	*43*		*25 - 125*	*06/04/24 00:00*	*06/24/24 18:12*	*1*

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-97851-4

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Water

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			06/07/24 16:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*38 - 134*		*06/07/24 16:38*	*1*

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-5

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Water

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			06/07/24 17:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*38 - 134*		*06/07/24 17:04*	*1*

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-97851-6

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Matrix: Water

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			06/07/24 17:30	1

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

Job ID: 380-97851-2
SDG: 625, 8015

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)
Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Lab Sample ID: 380-97851-6
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		38 - 134		06/07/24 17:30	1

Surrogate Summary

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

Job ID: 380-97851-2
SDG: 625, 8015

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(38-134)
380-97851-1	AIEA GULCH WELLS PUMP 2 (	108
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	102
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	104

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(38-134)
380-97742-C-1 MSD	Matrix Spike Duplicate	109
380-97742-F-1 MS	Matrix Spike	116
380-97851-4	TB:AIEA GULCH WELLS P2 (331-202-TP072)	107
380-97851-5	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	102
380-97851-6	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	102
LCS 570-448672/4	Lab Control Sample	106
LCSD 570-448672/5	Lab Control Sample Dup	105
MB 570-448672/6	Method Blank	100
MRL 570-448672/3	Lab Control Sample	99

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)
		OTCSN1
Lab Sample ID	Client Sample ID	(60-130)
380-97851-1	AIEA GULCH WELLS PUMP 2 (	68
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	72
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	79

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)
		OTCSN1
Lab Sample ID	Client Sample ID	(60-130)
LCS 570-447569/2-A	Lab Control Sample	73
LCSD 570-447569/3-A	Lab Control Sample Dup	77

Surrogate Summary

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

Job ID: 380-97851-2
SDG: 625, 8015

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	OTCSN1 (60-130)								
MB 570-447569/1-A	Method Blank	75								
MRL 570-447569/4-A	Lab Control Sample	75								

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Acenapht (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)				
118537-B1	Method Blank	88	91	88	84	103				
118537-BS1	Lab Control Sample	72	91	70	63	92				
118537-BS2	Lab Control Sample Dup	79	93	75	74	92				

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Acenapht (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)				
380-97851-1	AIEA GULCH WELLS PUMP 2 (	47	54	77	43	101				
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	55	61	74	49	88				
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	52	60	63	43	80				

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

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

Lab Sample ID: MB 570-448672/6
Matrix: Water
Analysis Batch: 448672

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			06/07/24 15:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*38 - 134*		*06/07/24 15:36*	*1*

Lab Sample ID: LCS 570-448672/4
Matrix: Water
Analysis Batch: 448672

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)			400	341		ug/L		85	78 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*38 - 134*

Lab Sample ID: LCSD 570-448672/5
Matrix: Water
Analysis Batch: 448672

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)			400	347		ug/L		87	78 - 120	2	10

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

Lab Sample ID: MRL 570-448672/3
Matrix: Water
Analysis Batch: 448672

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	12.1		ug/L		121	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*38 - 134*

Lab Sample ID: 380-97742-C-1 MSD
Matrix: Water
Analysis Batch: 448672

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
Gasoline Range Organics (C4-C13)	<10		400	331		ug/L		83	68 - 122	1	18

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*38 - 134*

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

Lab Sample ID: 380-97742-F-1 MS
Matrix: Water
Analysis Batch: 448672

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
Gasoline Range Organics (C4-C13)	<10		400	326		ug/L		81	68 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*38 - 134*

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

Lab Sample ID: MB 570-447569/1-A
Matrix: Water
Analysis Batch: 452200

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447569

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25		ug/L		06/04/24 20:06	06/18/24 23:47	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		06/04/24 20:06	06/18/24 23:47	1
C8-C18	<25		25		ug/L		06/04/24 20:06	06/18/24 23:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*75*		*60 - 130*	*06/04/24 20:06*	*06/18/24 23:47*	*1*

Lab Sample ID: LCS 570-447569/2-A
Matrix: Water
Analysis Batch: 452200

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447569

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28			1600	1210		ug/L		75	56 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*73*		*60 - 130*

Lab Sample ID: LCSD 570-447569/3-A
Matrix: Water
Analysis Batch: 452200

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 447569

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			1600	1170		ug/L		73	56 - 127	3	23

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*77*		*60 - 130*

Lab Sample ID: MRL 570-447569/4-A
Matrix: Water
Analysis Batch: 452200

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447569

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28			0.0200	0.0301	^3+	mg/L		151	50 - 150

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

Lab Sample ID: MRL 570-447569/4-A
Matrix: Water
Analysis Batch: 452200

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447569

Surrogate	MRL %Recovery	MRL Qualifier	Limits
n-Octacosane (Surr)	75		60 - 130

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Lab Sample ID: 118537-B1
Matrix: BlankMatrix
Analysis Batch: O-45096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-45096_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Acenaphthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Biphenyl	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Chrysene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/04/24 00:00	06/23/24 11:58	1
Fluoranthene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Fluorene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Naphthalene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Perylene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Phenanthrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1
Pyrene	ND		0.005	0.001	µg/L		06/04/24 00:00	06/23/24 11:58	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	88		27 - 133	06/04/24 00:00	06/23/24 11:58	1
(d10-Phenanthrene)	91		43 - 129	06/04/24 00:00	06/23/24 11:58	1
(d12-Chrysene)	88		52 - 144	06/04/24 00:00	06/23/24 11:58	1
(d12-Perylene)	103		36 - 161	06/04/24 00:00	06/23/24 11:58	1
(d8-Naphthalene)	84		25 - 125	06/04/24 00:00	06/23/24 11:58	1

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 118537-BS1
Matrix: BlankMatrix
Analysis Batch: O-45096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-45096_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			0.5	0.334		µg/L		67	31 - 128		
1-Methylphenanthrene			0.5	0.468		µg/L		94	66 - 127		
2,3,5-Trimethylnaphthalene			0.5	0.411		µg/L		82	55 - 122		
2,6-Dimethylnaphthalene			0.5	0.371		µg/L		74	48 - 120		
2-Methylnaphthalene			0.5	0.331		µg/L		66	47 - 130		
Acenaphthene			0.5	0.364		µg/L		73	53 - 131		
Acenaphthylene			0.5	0.38		µg/L		76	43 - 140		
Anthracene			0.5	0.425		µg/L		85	58 - 135		
Benz[a]anthracene			0.5	0.697		µg/L		139	55 - 145		
Benzo[a]pyrene			0.5	0.448		µg/L		90	51 - 143		
Benzo[b]fluoranthene			0.5	0.676		µg/L		135	46 - 165		
Benzo[e]pyrene			0.5	0.425		µg/L		85	42 - 152		
Benzo[g,h,i]perylene			0.5	0.443		µg/L		89	63 - 133		
Benzo[k]fluoranthene			0.5	0.578		µg/L		116	56 - 145		
Biphenyl			0.5	0.365		µg/L		73	56 - 119		
Chrysene			0.5	0.534		µg/L		107	56 - 141		
Dibenz[a,h]anthracene			0.5	0.558		µg/L		112	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.343		µg/L		69	50 - 150		
Dibenzothiophene			0.5	0.451		µg/L		90	46 - 126		
Disalicylidenepropanediamine			50	49.8		µg/L		100	50 - 150		
Fluoranthene			0.5	0.503		µg/L		101	60 - 146		
Fluorene			0.5	0.397		µg/L		79	58 - 131		
Indeno[1,2,3-cd]pyrene			0.5	0.521		µg/L		104	50 - 151		
Naphthalene			0.5	0.318		µg/L		64	41 - 126		
Perylene			0.5	0.478		µg/L		96	48 - 141		
Phenanthrene			0.5	0.454		µg/L		91	67 - 127		
Pyrene			0.5	0.498		µg/L		100	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*72*		*27 - 133*
(d10-Phenanthrene)	*91*		*43 - 129*
(d12-Chrysene)	*70*		*52 - 144*
(d12-Perylene)	*92*		*36 - 161*
(d8-Naphthalene)	*63*		*25 - 125*

Lab Sample ID: 118537-BS2
Matrix: BlankMatrix
Analysis Batch: O-45096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45096_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.389		µg/L		78	31 - 128	15	30
1-Methylphenanthrene			0.5	0.474		µg/L		95	66 - 127	1	30
2,3,5-Trimethylnaphthalene			0.5	0.429		µg/L		86	55 - 122	5	30
2,6-Dimethylnaphthalene			0.5	0.404		µg/L		81	48 - 120	9	30
2-Methylnaphthalene			0.5	0.39		µg/L		78	47 - 130	17	30
Acenaphthene			0.5	0.396		µg/L		79	53 - 131	8	30
Acenaphthylene			0.5	0.414		µg/L		83	43 - 140	9	30
Anthracene			0.5	0.438		µg/L		88	58 - 135	3	30

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 118537-BS2
Matrix: BlankMatrix
Analysis Batch: O-45096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-45096_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benz[a]anthracene			0.5	0.703		µg/L		141	55 - 145	1	30
Benzo[a]pyrene			0.5	0.445		µg/L		89	51 - 143	1	30
Benzo[b]fluoranthene			0.5	0.694		µg/L		139	46 - 165	3	30
Benzo[e]pyrene			0.5	0.412		µg/L		82	42 - 152	4	30
Benzo[g,h,i]perylene			0.5	0.449		µg/L		90	63 - 133	1	30
Benzo[k]fluoranthene			0.5	0.607		µg/L		121	56 - 145	4	30
Biphenyl			0.5	0.384		µg/L		77	56 - 119	5	30
Chrysene			0.5	0.582		µg/L		116	56 - 141	8	30
Dibenz[a,h]anthracene			0.5	0.537		µg/L		107	55 - 150	5	30
Dibenzo[a,l]pyrene			0.5	0.362		µg/L		72	50 - 150	4	30
Dibenzothiophene			0.5	0.462		µg/L		92	46 - 126	2	30
Disalicylidenepropanediamine			50	48.1		µg/L		96	50 - 150	4	30
Fluoranthene			0.5	0.515		µg/L		103	60 - 146	2	30
Fluorene			0.5	0.416		µg/L		83	58 - 131	5	30
Indeno[1,2,3-cd]pyrene			0.5	0.519		µg/L		104	50 - 151	0	30
Naphthalene			0.5	0.368		µg/L		74	41 - 126	14	30
Perylene			0.5	0.45		µg/L		90	48 - 141	6	30
Phenanthrene			0.5	0.451		µg/L		90	67 - 127	1	30
Pyrene			0.5	0.502		µg/L		100	54 - 156	0	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*79*		*27 - 133*
(d10-Phenanthrene)	*93*		*43 - 129*
(d12-Chrysene)	*75*		*52 - 144*
(d12-Perylene)	*92*		*36 - 161*
(d8-Naphthalene)	*74*		*25 - 125*

GC VOA

Analysis Batch: 448672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015B GRO LL	
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	8015B GRO LL	
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015B GRO LL	
380-97851-4	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	8015B GRO LL	
380-97851-5	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	8015B GRO LL	
380-97851-6	TB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	8015B GRO LL	
MB 570-448672/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-448672/4	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-448672/5	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-448672/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-97742-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B GRO LL	
380-97742-F-1 MS	Matrix Spike	Total/NA	Water	8015B GRO LL	

GC Semi VOA

Prep Batch: 447569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	3510C	
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	3510C	
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	3510C	
MB 570-447569/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-447569/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-447569/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MRL 570-447569/4-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 452200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015B	447569
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	8015B	447569
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015B	447569
MB 570-447569/1-A	Method Blank	Total/NA	Water	8015B	447569
LCS 570-447569/2-A	Lab Control Sample	Total/NA	Water	8015B	447569
LCSD 570-447569/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	447569
MRL 570-447569/4-A	Lab Control Sample	Total/NA	Water	8015B	447569

Subcontract

Analysis Batch: O-45096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45096_P
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45096_P
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-45096_P
118537-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45096_P
118537-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45096_P
118537-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-45096_P

QC Association Summary

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

Job ID: 380-97851-2
SDG: 625, 8015

Subcontract

Prep Batch: O-45096_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA_625	
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40(	Total/NA	Drinking Water	EPA_625	
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	EPA_625	
118537-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
118537-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
118537-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-97851-2
SDG: 625, 8015

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-97851-1

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 20:33
Total/NA	Prep	3510C			447569	H6FE	EET CAL 4	06/04/24 20:06
Total/NA	Analysis	8015B		1	452200	SP9M	EET CAL 4	06/19/24 01:11
Total/NA	Prep	EPA_625		1	O-45096_P			06/04/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45096	YC		06/24/24 14:36

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-2

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 21:00
Total/NA	Prep	3510C			447569	H6FE	EET CAL 4	06/04/24 20:06
Total/NA	Analysis	8015B		1	452200	SP9M	EET CAL 4	06/19/24 01:32
Total/NA	Prep	EPA_625		1	O-45096_P			06/04/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45096	YC		06/24/24 16:24

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-97851-3

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 22:05
Total/NA	Prep	3510C			447569	H6FE	EET CAL 4	06/04/24 20:06
Total/NA	Analysis	8015B		1	452200	SP9M	EET CAL 4	06/19/24 01:53
Total/NA	Prep	EPA_625		1	O-45096_P			06/04/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-45096	YC		06/24/24 18:12

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-97851-4

Date Collected: 05/29/24 10:40
Date Received: 05/31/24 10:09

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 16:38

Lab Chronicle

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

Job ID: 380-97851-2
SDG: 625, 8015

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-97851-5

Date Collected: 05/29/24 11:00
Date Received: 05/31/24 10:09

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 17:04

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-97851-6

Date Collected: 05/29/24 11:15
Date Received: 05/31/24 10:09

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	448672	GC3Z	EET CAL 4	06/07/24 17:30

Laboratory References:

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

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 [SUBCONTRACT]

Job ID: 380-97851-2
SDG: 625, 8015

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	9257304	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	02-02-25
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 [SUBCONTRACT]

Job ID: 380-97851-2
SDG: 625, 8015

Method	Method Description	Protocol	Laboratory
8015B GRO LL	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	EET CAL 4
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

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

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 [SUBCONTRACT]

Job ID: 380-97851-2
SDG: 625, 8015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-97851-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	05/29/24 10:40	05/31/24 10:09	HI0000331
380-97851-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	05/29/24 11:00	05/31/24 10:09	HI0000331
380-97851-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	05/29/24 11:15	05/31/24 10:09	HI0000331
380-97851-4	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Water	05/29/24 10:40	05/31/24 10:09	
380-97851-5	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	05/29/24 11:00	05/31/24 10:09	
380-97851-6	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Water	05/29/24 11:15	05/31/24 10:09	

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

June 27, 2024

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

Project Name: RED-HILL Project # 38001111 Job # 380-97851-1
Physis Project ID: 1407003-515

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 6/3/2024. A total of 3 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,

Misty Mercier
714 602-5320
Extension 202
mistymercier@physislabs.com

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-515

RED-HILL Project # 38001111 Job # 380-97851-1

Total Samples: 3

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
118538	AIEA GULCH WELLS PUMP 2	331-202-TP072 (380-97851-1)	5/29/2024	10:40	Samplewater	Not Specified
118539	AIEA WELLS PUMPS 1&2 (260)	331-203-TP400 (380-97851-2)	5/29/2024	11:00	Samplewater	Not Specified
118540	HALAWA Wells 1&2	331-241-TP401 (380-97851-3)	5/29/2024	11:15	Samplewater	Not Specified

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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

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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 MS1/MS2, BS1/BS2, LCS1/LCS2, LCM1/LCM2, CRM1/CRM2, surrogate spikes and/or replicate project sample analysis (R1/R2) 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

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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.

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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

PHYSIS Project ID: 1407003-515
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-97851-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118538-R1	**AIEA GULCH WELLS PUMP 2 331-20**	**Matrix: Samplewater**						**Sampled: 29-May-24 10:40**		**Received: 03-Jun-24**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45096	04-Jun-24	24-Jun-24
Sample ID: 118539-R1	**AIEA WELLS PUMPS 1&2 (260) 331-**	**Matrix: Samplewater**						**Sampled: 29-May-24 11:00**		**Received: 03-Jun-24**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45096	04-Jun-24	24-Jun-24
Sample ID: 118540-R1	**HALAWA Wells 1&2 331-241-TP401 (38**	**Matrix: Samplewater**						**Sampled: 29-May-24 11:15**		**Received: 03-Jun-24**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-45096	04-Jun-24	24-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118538-R1	**AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater**						**Sampled: 29-May-24 10:40**			**Received:**	**03-Jun-24**
(d10-Acenaphthene)	EPA 625.1	% Recovery	47	1			Total		O-45096	04-Jun-24	24-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	54	1			Total		O-45096	04-Jun-24	24-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	77	1			Total		O-45096	04-Jun-24	24-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	101	1			Total		O-45096	04-Jun-24	24-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	43	1			Total		O-45096	04-Jun-24	24-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24

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-45096	04-Jun-24	24-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118539-R1	**AIEA WELLS PUMPS 1&2 (260) 331-**	**Matrix: Samplewater**					**Sampled: 29-May-24 11:00**			**Received:**	**03-Jun-24**
(d10-Acenaphthene)	EPA 625.1	% Recovery	55	1			Total		O-45096	04-Jun-24	24-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	61	1			Total		O-45096	04-Jun-24	24-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	74	1			Total		O-45096	04-Jun-24	24-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	88	1			Total		O-45096	04-Jun-24	24-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	49	1			Total		O-45096	04-Jun-24	24-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24

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-45096	04-Jun-24	24-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 118540-R1	**HALAWA Wells 1&2 331-241-TP401 (38**	**Matrix: Samplewater**					**Sampled: 29-May-24 11:15**			**Received: 03-Jun-24**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	52	1			Total		O-45096	04-Jun-24	24-Jun-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	60	1			Total		O-45096	04-Jun-24	24-Jun-24
(d12-Chrysene)	EPA 625.1	% Recovery	63	1			Total		O-45096	04-Jun-24	24-Jun-24
(d12-Perylene)	EPA 625.1	% Recovery	80	1			Total		O-45096	04-Jun-24	24-Jun-24
(d8-Naphthalene)	EPA 625.1	% Recovery	43	1			Total		O-45096	04-Jun-24	24-Jun-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24

PHYSIS Project ID: 1407003-515
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-97851-1

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-45096	04-Jun-24	24-Jun-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-45096	04-Jun-24	24-Jun-24

QUALITY CONTROL REPORT

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118537-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-45096		Prepared: 04-Jun-24					Analyzed: 23-Jun-24	
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 118537-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-45096		Prepared: 04-Jun-24					Analyzed: 24-Jun-24	
Disalicylidenepropanediamin	Total	49.8	1	0.05	0.1	µg/L	50	0	100	50 - 150%	PASS			
Sample ID: 118537-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-45096		Prepared: 04-Jun-24					Analyzed: 24-Jun-24	
Disalicylidenepropanediamin	Total	48.1	1	0.05	0.1	µg/L	50	0	96	50 - 150%	PASS	4	30 PASS	

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118537-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-45096		Prepared: 04-Jun-24				Analyzed: 23-Jun-24	
(d10-Acenaphthene)	Total	88	1			% Recovery	100	88	27 - 133%	PASS			
(d10-Phenanthrene)	Total	91	1			% Recovery	100	91	43 - 129%	PASS			
(d12-Chrysene)	Total	88	1			% Recovery	100	88	52 - 144%	PASS			
(d12-Perylene)	Total	103	1			% Recovery	100	103	36 - 161%	PASS			
(d8-Naphthalene)	Total	84	1			% Recovery	100	84	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							
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L							

PHYSIS Project ID: 1407003-515
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-97851-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 118537-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-45096		Prepared: 04-Jun-24				Analyzed: 24-Jun-24	
(d10-Acenaphthene)	Total	72	1			% Recovery	100	0	72	27 - 133%		PASS	
(d10-Phenanthrene)	Total	91	1			% Recovery	100	0	91	43 - 129%		PASS	
(d12-Chrysene)	Total	70	1			% Recovery	100	0	70	52 - 144%		PASS	
(d12-Perylene)	Total	92	1			% Recovery	100	0	92	36 - 161%		PASS	
(d8-Naphthalene)	Total	63	1			% Recovery	100	0	63	25 - 125%		PASS	
1-Methylnaphthalene	Total	0.334	1	0.001	0.005	µg/L	0.5	0	67	31 - 128%		PASS	
1-Methylphenanthrene	Total	0.468	1	0.001	0.005	µg/L	0.5	0	94	66 - 127%		PASS	
2,3,5-Trimethylnaphthalene	Total	0.411	1	0.001	0.005	µg/L	0.5	0	82	55 - 122%		PASS	
2,6-Dimethylnaphthalene	Total	0.371	1	0.001	0.005	µg/L	0.5	0	74	48 - 120%		PASS	
2-Methylnaphthalene	Total	0.331	1	0.001	0.005	µg/L	0.5	0	66	47 - 130%		PASS	
Acenaphthene	Total	0.364	1	0.001	0.005	µg/L	0.5	0	73	53 - 131%		PASS	
Acenaphthylene	Total	0.38	1	0.001	0.005	µg/L	0.5	0	76	43 - 140%		PASS	
Anthracene	Total	0.425	1	0.001	0.005	µg/L	0.5	0	85	58 - 135%		PASS	
Benz[a]anthracene	Total	0.697	1	0.001	0.005	µg/L	0.5	0	139	55 - 145%		PASS	
Benzo[a]pyrene	Total	0.448	1	0.001	0.005	µg/L	0.5	0	90	51 - 143%		PASS	
Benzo[b]fluoranthene	Total	0.676	1	0.001	0.005	µg/L	0.5	0	135	46 - 165%		PASS	
Benzo[e]pyrene	Total	0.425	1	0.001	0.005	µg/L	0.5	0	85	42 - 152%		PASS	
Benzo[g,h,i]perylene	Total	0.443	1	0.001	0.005	µg/L	0.5	0	89	63 - 133%		PASS	
Benzo[k]fluoranthene	Total	0.578	1	0.001	0.005	µg/L	0.5	0	116	56 - 145%		PASS	
Biphenyl	Total	0.365	1	0.001	0.005	µg/L	0.5	0	73	56 - 119%		PASS	
Chrysene	Total	0.534	1	0.001	0.005	µg/L	0.5	0	107	56 - 141%		PASS	
Dibenz[a,h]anthracene	Total	0.558	1	0.001	0.005	µg/L	0.5	0	112	55 - 150%		PASS	
Dibenzo[a,l]pyrene	Total	0.343	1	0.001	0.005	µg/L	0.5	0	69	50 - 150%		PASS	
Dibenzothiophene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	46 - 126%		PASS	

PHYSIS Project ID: 1407003-515
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-97851-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Fluoranthene	Total	0.503	1	0.001	0.005	µg/L	0.5	0	101	60 - 146%	PASS			
Fluorene	Total	0.397	1	0.001	0.005	µg/L	0.5	0	79	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.521	1	0.001	0.005	µg/L	0.5	0	104	50 - 151%	PASS			
Naphthalene	Total	0.318	1	0.001	0.005	µg/L	0.5	0	64	41 - 126%	PASS			
Perylene	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	48 - 141%	PASS			
Phenanthrene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	67 - 127%	PASS			
Pyrene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	
Sample ID: 118537-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**				**Received:**			
		Method: EPA 625.1				Batch ID: O-45096			Prepared: 04-Jun-24			Analyzed: 24-Jun-24		
(d10-Acenaphthene)	Total	79	1			% Recovery	100	0	79	27 - 133%	PASS	9	30	PASS
(d10-Phenanthrene)	Total	93	1			% Recovery	100	0	93	43 - 129%	PASS	2	30	PASS
(d12-Chrysene)	Total	75	1			% Recovery	100	0	75	52 - 144%	PASS	7	30	PASS
(d12-Perylene)	Total	92	1			% Recovery	100	0	92	36 - 161%	PASS	0	30	PASS
(d8-Naphthalene)	Total	74	1			% Recovery	100	0	74	25 - 125%	PASS	16	30	PASS
1-Methylnaphthalene	Total	0.389	1	0.001	0.005	µg/L	0.5	0	78	31 - 128%	PASS	15	30	PASS
1-Methylphenanthrene	Total	0.474	1	0.001	0.005	µg/L	0.5	0	95	66 - 127%	PASS	1	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.429	1	0.001	0.005	µg/L	0.5	0	86	55 - 122%	PASS	5	30	PASS
2,6-Dimethylnaphthalene	Total	0.404	1	0.001	0.005	µg/L	0.5	0	81	48 - 120%	PASS	9	30	PASS
2-Methylnaphthalene	Total	0.39	1	0.001	0.005	µg/L	0.5	0	78	47 - 130%	PASS	17	30	PASS
Acenaphthene	Total	0.396	1	0.001	0.005	µg/L	0.5	0	79	53 - 131%	PASS	8	30	PASS
Acenaphthylene	Total	0.414	1	0.001	0.005	µg/L	0.5	0	83	43 - 140%	PASS	9	30	PASS
Anthracene	Total	0.438	1	0.001	0.005	µg/L	0.5	0	88	58 - 135%	PASS	3	30	PASS
Benz[a]anthracene	Total	0.703	1	0.001	0.005	µg/L	0.5	0	141	55 - 145%	PASS	1	30	PASS
Benzo[a]pyrene	Total	0.445	1	0.001	0.005	µg/L	0.5	0	89	51 - 143%	PASS	1	30	PASS
Benzo[b]fluoranthene	Total	0.694	1	0.001	0.005	µg/L	0.5	0	139	46 - 165%	PASS	3	30	PASS
Benzo[e]pyrene	Total	0.412	1	0.001	0.005	µg/L	0.5	0	82	42 - 152%	PASS	4	30	PASS
Benzo[g,h,i]perylene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	63 - 133%	PASS	1	30	PASS
Benzo[k]fluoranthene	Total	0.607	1	0.001	0.005	µg/L	0.5	0	121	56 - 145%	PASS	4	30	PASS
Biphenyl	Total	0.384	1	0.001	0.005	µg/L	0.5	0	77	56 - 119%	PASS	5	30	PASS
Chrysene	Total	0.582	1	0.001	0.005	µg/L	0.5	0	116	56 - 141%	PASS	8	30	PASS
Dibenz[a,h]anthracene	Total	0.537	1	0.001	0.005	µg/L	0.5	0	107	55 - 150%	PASS	5	30	PASS
Dibenzo[a,l]pyrene	Total	0.362	1	0.001	0.005	µg/L	0.5	0	72	50 - 150%	PASS	4	30	PASS
Dibenzothiophene	Total	0.462	1	0.001	0.005	µg/L	0.5	0	92	46 - 126%	PASS	2	30	PASS

PHYSIS Project ID: 1407003-515
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-97851-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Fluoranthene	Total	0.515	1	0.001	0.005	µg/L	0.5	0	103	60 - 146%	PASS	2	30	PASS	
Fluorene	Total	0.416	1	0.001	0.005	µg/L	0.5	0	83	58 - 131%	PASS	5	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.519	1	0.001	0.005	µg/L	0.5	0	104	50 - 151%	PASS	0	30	PASS	
Naphthalene	Total	0.368	1	0.001	0.005	µg/L	0.5	0	74	41 - 126%	PASS	14	30	PASS	
Perylene	Total	0.45	1	0.001	0.005	µg/L	0.5	0	90	48 - 141%	PASS	6	30	PASS	
Phenanthrene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	67 - 127%	PASS	1	30	PASS	
Pyrene	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	54 - 156%	PASS	0	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 118538

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3707	3.0613	1111	Anthracene-D10-	1517-22-2	92
62.9612	1.7909	650	Heptacosane	593-49-7	95
10.6220	0.8700	316	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	89
10.2664	0.6738	245	Hydroperoxide, 1-ethylbutyl	24254-56-6	84
55.3275	0.4832	175	Benzyl butyl phthalate	85-68-7	95

Concentration estimated using the response for Anthracene-d10

Sample ID: 118539

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3701	2.5917	1111	Anthracene-D10-	1517-22-2	93
59.9607	0.4001	172	1,3-Propanediamine	109-76-2	82
10.3910	0.3043	130	2-Methylbutanoic anhydride	1468-39-9	85
10.9684	0.3255	140	3,3-Diethoxy-1-propyne	10160-87-9	88
73.9688	0.5178	222	Heneicosane	629-94-7	89
10.2672	0.5999	257	Hydroperoxide, 1-ethylbutyl	24254-56-6	84
10.6225	0.8138	349	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	89

Concentration estimated using the response for Anthracene-d10

Sample ID: 118540

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.3685	2.7179	1111	Anthracene-D10-	1517-22-2	94
62.9616	1.6837	688	Heptacosane	593-49-7	93
10.6228	0.7686	314	Oxalic acid, cyclohexyl propyl ester	1000309-30-3	91
10.2675	0.6249	255	Hydroperoxide, 1-ethylbutyl	24254-56-6	85
10.9686	0.3665	150	3,3-Diethoxy-1-propyne	10160-87-9	85
10.9686	0.3665	150	Ethanone, 1-cyclobutyl-	3019-25-8	85
11.0087	0.3161	129	Pentane, 1,3-dibromo-	42474-20-4	94
10.3911	0.3089	126	2-Methylbutanoic anhydride	1468-39-9	86
55.3274	0.2824	115	Benzyl butyl phthalate	85-68-7	92

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_45096

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.9382	2.6172	1111	Anthracene-D10-	1517-22-2	95
10.6221	0.6663	283	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	89
10.2671	0.4485	190	Hydroperoxide, 1-ethylbutyl	24254-56-6	84

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

eurofins | Environment Testing

7/1/2024

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-128756.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-97851-1
Address: 1904 Wright Circle, ,	Due Date Requested: 6/19/2024			
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

Preservation Codes: -

Other:

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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-97851-1)	5/29/24	10:40 Hawaiian		Water			X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-97851-2)	5/29/24	11:00 Hawaiian		Water			X	2	See Attached Instructions
HALAWA SHAFT (331-241-TP401) (380-97851-3)	5/29/24	11:15 Hawaiian		Water			X	2	See Attached Instructions

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.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 6/3/24 1750	Company: GBA	Received by: CEASAR NWADIWE	Date/Time: 6/3/24 1253	Company: PHYSIS		
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:

Ver: 04/02/2024

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Project Iteration ID: 1407003-515
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111 Job # 380-97851-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: CN
2. Date Received: 6/3/24
3. Time Received: 1253
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): 0.8 Used I/R Thermometer # 1

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

eurofins | Environment Testing America

Client Information	Sampler: MISN/KENWA PA	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges: C10-C24/C24-C36/C8-C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	A	Q	QA	Y	I		
MOANALUA WELLS				Water							3	3		chlorinated
AIEA GULCH WELLS PUMP2	29-May-2024	1040		Water							3	3		chlorinated
AIEA WELLS PUMPS 1&2 (260)	29-May-2024	1100		Water							3	3		
HALAWA WELLS UNITS 1&2	29-May-2024	1115		Water							3	3		
FB MOANALUA WELLS				Water							1	1		
FB AIEA GULCH WELLS PUMP2	29-May-2024	1040		Water							1	1		
FB AIEA WELLS PUMPS 1&2 (260)	29-May-2024	1100		Water							1	1		
FB HALAWA WELLS UNITS 1&2	29-May-2024	1115		Water							1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	5/29/24 1200	HBWS			
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:

Ver: 01/16/2019

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

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: MSHIELDS AT PA	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-27984-2757.2
Client Contact: Dr. Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

380-97851 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges: C10-C24/C24-C36/C8-C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	A	Q		Y	N		
MOANALUA WELLS				Water			2	4	2	2	DID NOT REC			chlorinated
AIEA GULCH WELLS PUMP2	29-May-2024	1040		Water			2	4	2	2	3	3		chlorinated
AIEA WELLS PUMPS 1&2 (260)	29-May-2024	1100		Water			2	4	2	2	3	3		
HALAWA WELLS UNITS 1&2	29-May-2024	1115		Water			2	4	2	2	3	3		
TB MOANALUA WELLS				Water				2			DID NOT RUN			
TB AIEA GULCH WELLS PUMP2	29-May-2024	1040		Water				2			1	1		
TB AIEA WELLS PUMPS 1&2 (260)	29-May-2024	1100		Water				2			1	1		
TB HALAWA WELLS UNITS 1&2	29-May-2024	1115		Water				2			1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	5/29/24 1210	HBWS		5/31/24 1007	GEL
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:
		63A 3.1-0.1 = 3.0 GEL

ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 30MAY24
ACTWGT: 50.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
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INV:
PO: DEPT:

583J4/C450/9AE3

FedEx Express

J2202403260luv

FRI - 31 MAY 10:30A
PRIORITY OVERNIGHT

3 of 5
MPS# 0263 7766 2922 8188
Mstr# 7766 2922 8166

0201

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WM ONTA

After printing this label:
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BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 30MAY24
ACTWGT: 50.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
INV:
PO: DEPT:

583J4/C456/9AE3

FedEx Express

J242824932601uv

1 of 5

FRI - 31 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7766 2922 8166
MASTER

WM ONTA

91768
CA-US ONT

631A 3.7-0.1 = 3.6 ±CE

5/31/24 0955

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CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 30MAY24
ACTWGT: 50.00 LB
CAD: 258050552/INET4535

BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT
EUROFINS DRINKING WATER TESTING
941 CORPORATE CENTER DR

POMONA CA 91768
(626) 386-1100 REF:
INV:
PO: DEPT:

583J4/C458/9AE3

FedEx Express

J24202403260 1uv

5 of 5
MPS# 0263 7766 2922 8203
Mstr# 7766 2922 8166

FRI - 31 MAY 10:30A
PRIORITY OVERNIGHT

0201

91768
ONT
CA-US

WM ONTA

2.7 - 0.2 = 2.5 (630A) Gel Frozen

Danni 5-30-24 10:09 EEAP

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-97851-2
SDG Number: 625, 8015

Login Number: 97851
List Number: 1
Creator: Sanchez Velasquez, Gustavo

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	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: 380-97851-2
SDG Number: 625, 8015

Login Number: 97851
List Number: 2
Creator: Khana, Piyush

List Source: Eurofins Calscience
List Creation: 05/31/24 03:38 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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	2.3
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 6/20/2024 9:27:56 AM

JOB DESCRIPTION

RED-HILL
525.2, 533, 537.1

JOB NUMBER

380-99971-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Job Notes

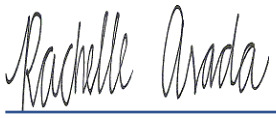
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
F1	MS and/or MSD recovery exceeds control limits.
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.

LCMS

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job Narrative
380-99971-1

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 6/14/2024 9:39 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.9°C, 3.2°C, 3.4°C and 3.5°C.

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

PFAS
Method 537.1: The following QC issues in 380-95157 OR 380-95190 were observed: Surrogate d5-NEtFOSAA, 13C2 PFHxA, 13C2 PFDA and 13C3-GenX recoveries for LCS were above QC acceptance criteria (high bias) and all target compound recoveries were below QC acceptance criteria for FB sample FB MOANALUA WELLS (380-99971-5). Results not acceptable per method. Insufficient volume for re-extraction / re-analysis. Data excluded, there are no detections in associated native sample therefore analysis of Field Blank is not necessary per method.

Method 537.1: The following QC issues in 380-95157 OR 380-95190 were observed: Surrogate d5-NEtFOSAA, 13C2 PFHxA, 13C2 PFDA and 13C3-GenX recoveries for LCS were above QC acceptance criteria (high bias) and all target compound recoveries were below QC acceptance criteria for FB sample FB AIEA GULCH WELLS PUMP2 (380-99971-6). Results not acceptable per method. Insufficient volume for re-extraction / re-analysis. Data excluded, there are no detections in associated native sample therefore analysis of Field Blank is not necessary per method.

Method 537.1: The following QC issues in 380-95157 OR 380-95190 were observed: Surrogate d5-NEtFOSAA, 13C2 PFHxA, 13C2 PFDA and 13C3-GenX recoveries for LCS were above QC acceptance criteria (high bias) and all target compound recoveries were below QC acceptance criteria for FB sample FB AIEA WELLS PUMPS 1&2 (260) (380-99971-7). Results not acceptable per method. Insufficient volume for re-extraction / re-analysis. Data excluded, there are no detections in associated native sample therefore analysis of Field Blank is not necessary per method.

Method 537.1: The following QC issues in 380-95157 OR 380-95190 were observed: Surrogate d5-NEtFOSAA, 13C2 PFHxA, 13C2 PFDA and 13C3-GenX recoveries for LCS were above QC acceptance criteria (high bias) and all target compound recoveries were below QC acceptance criteria for FB sample FB HALAWA WELLS UNITS 1 & 2 (380-99971-8). Results not acceptable per method. Insufficient volume for re-extraction / re-analysis. Any detection in associated native sample is not acceptable per method. There were detections in field sample therefore, both field sample and field blank data excluded due to this QC failure.

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

Detection Summary

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-99971-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Dieldrin	0.021		0.0098		ug/L	1		525.2	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP2 — Lab Sample ID: 380-99971-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) — Lab Sample ID: 380-99971-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 — Lab Sample ID: 380-99971-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Dieldrin	0.043		0.0097		ug/L	1		525.2	Total/NA
Heptachlor epoxide (isomer B)	0.017		0.0097		ug/L	1		525.2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.4		2.0		ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0		ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		2.0		ng/L	1		533	Total/NA

Client Sample ID: FB MOANALUA WELLS — Lab Sample ID: 380-99971-5

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP2 — Lab Sample ID: 380-99971-6

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) — Lab Sample ID: 380-99971-7

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 — Lab Sample ID: 380-99971-8

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 06/12/24 10:10
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-1
Matrix: Water

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		06/17/24 12:30	06/18/24 16:43	1
2,4'-DDD	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
2,4'-DDE	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
2,4'-DDT	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
2-Methylnaphthalene	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
4,4'-DDD	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
4,4'-DDE	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
4,4'-DDT	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Acenaphthene	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Acenaphthylene	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Acetochlor	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Alachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
alpha-BHC	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
alpha-Chlordane	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Anthracene	<0.020		0.020		ug/L		06/17/24 12:30	06/18/24 16:43	1
Atrazine	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/17/24 12:30	06/18/24 16:43	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/17/24 12:30	06/18/24 16:43	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/17/24 12:30	06/18/24 16:43	1
beta-BHC	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/17/24 12:30	06/18/24 16:43	1
Bromacil	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Butachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/17/24 12:30	06/18/24 16:43	1
Chlorobenzilate	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Chloroneb	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Chlorpyrifos	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Chrysene	<0.020		0.020		ug/L		06/17/24 12:30	06/18/24 16:43	1
delta-BHC	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/17/24 12:30	06/18/24 16:43	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Dieldrin	**0.021**		0.0098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Diethylphthalate	<0.49		0.49		ug/L		06/17/24 12:30	06/18/24 16:43	1
Dimethylphthalate	<0.49		0.49		ug/L		06/17/24 12:30	06/18/24 16:43	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		06/17/24 12:30	06/18/24 16:43	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Endosulfan II (Beta)	<0.098	^3+	0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Endosulfan sulfate	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Endrin	<0.0098		0.0098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Endrin aldehyde	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
EPTC	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Fluoranthene	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 06/12/24 10:10
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
gamma-Chlordane	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Heptachlor	<0.0098		0.0098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Heptachlor epoxide (isomer B)	<0.0098		0.0098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Isophorone	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Lindane	<0.0098		0.0098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Malathion	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Methoxychlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Metolachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Molinate	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Naphthalene	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Parathion	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Phenanthrene	<0.039		0.039		ug/L		06/17/24 12:30	06/18/24 16:43	1
Propachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Pyrene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Simazine	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Terbacil	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Terbuthylazine	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Thiobencarb	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/17/24 12:30	06/18/24 16:43	1
trans-Nonachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 16:43	1
Trifluralin	<0.098		0.098		ug/L		06/17/24 12:30	06/18/24 16:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/17/24 12:30*	*06/18/24 16:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*98*		*70 - 130*	*06/17/24 12:30*	*06/18/24 16:43*	*1*
Perylene-d12	*94*		*70 - 130*	*06/17/24 12:30*	*06/18/24 16:43*	*1*
Triphenylphosphate	*104*		*70 - 130*	*06/17/24 12:30*	*06/18/24 16:43*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 06/12/24 10:10
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*85*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C6 PFDA	*97*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C5 PFHxA	*91*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C4 PFHpA	*99*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C8 PFOA	*102*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C9 PFNA	*100*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C7 PFUnA	*90*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C2 PFDoA	*90*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C4 PFBA	*100*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C5 PFPeA	*108*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C3 PFBS	*106*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C3 PFHxS	*117*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C8 PFOS	*107*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C2-4:2-FTS	*131*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C2-6:2-FTS	*153*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*1*
13C2-8:2-FTS	*122*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:20*	*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		06/17/24 15:24	06/18/24 14:43	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-99971-1
Matrix: Water
Date Collected: 06/12/24 10:10
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*117*		*70 - 130*	*06/17/24 15:24*	*06/18/24 14:43*	*1*
13C2 PFHxA	*123*		*70 - 130*	*06/17/24 15:24*	*06/18/24 14:43*	*1*
13C2 PFDA	*125*		*70 - 130*	*06/17/24 15:24*	*06/18/24 14:43*	*1*
13C3-GenX	*112*		*70 - 130*	*06/17/24 15:24*	*06/18/24 14:43*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-99971-2
Matrix: Water
Date Collected: 06/12/24 11:00
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
2,4'-DDD	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
2,4'-DDE	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
2,4'-DDT	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
2,4-Dinitrotoluene	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
2,6-Dinitrotoluene	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
2-Methylnaphthalene	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
4,4'-DDD	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
4,4'-DDE	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
4,4'-DDT	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Acenaphthene	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Acenaphthylene	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Acetochlor	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Alachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
alpha-BHC	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
alpha-Chlordane	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Anthracene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:03	1
Atrazine	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Benz(a)anthracene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Benzo[a]pyrene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:03	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:03	1
Benzo[g,h,i]perylene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP2
Date Collected: 06/12/24 11:00
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:03	1
beta-BHC	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		06/17/24 12:30	06/18/24 17:03	1
Bromacil	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Butachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Butylbenzylphthalate	<0.48		0.48		ug/L		06/17/24 12:30	06/18/24 17:03	1
Chlorobenzilate	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Chloroneb	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Chlorothalonil (Draconil, Bravo)	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Chlorpyrifos	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Chrysene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:03	1
delta-BHC	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		06/17/24 12:30	06/18/24 17:03	1
Dibenz(a,h)anthracene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Diclorvos (DDVP)	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Dieldrin	<0.0096		0.0096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Diethylphthalate	<0.48		0.48		ug/L		06/17/24 12:30	06/18/24 17:03	1
Dimethylphthalate	<0.48		0.48		ug/L		06/17/24 12:30	06/18/24 17:03	1
Di-n-butyl phthalate	<0.96		0.96		ug/L		06/17/24 12:30	06/18/24 17:03	1
Di-n-octyl phthalate	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Endosulfan I (Alpha)	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Endosulfan II (Beta)	<0.096	^3+	0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Endosulfan sulfate	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Endrin	<0.0096		0.0096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Endrin aldehyde	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
EPTC	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Fluoranthene	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Fluorene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
gamma-Chlordane	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Heptachlor	<0.0096		0.0096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Heptachlor epoxide (isomer B)	<0.0096		0.0096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Hexachlorobenzene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Hexachlorocyclopentadiene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Isophorone	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Lindane	<0.0096		0.0096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Malathion	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Methoxychlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Metolachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Molinate	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Naphthalene	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Parathion	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Pendimethalin (Penoxaline)	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Phenanthrene	<0.039		0.039		ug/L		06/17/24 12:30	06/18/24 17:03	1
Propachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Pyrene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Simazine	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Terbacil	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Terbuthylazine	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP2

Date Collected: 06/12/24 11:00
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		06/17/24 12:30	06/18/24 17:03	1
trans-Nonachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:03	1
Trifluralin	<0.096		0.096		ug/L		06/17/24 12:30	06/18/24 17:03	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/17/24 12:30*	*06/18/24 17:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*98*		*70 - 130*	*06/17/24 12:30*	*06/18/24 17:03*	*1*
Perylene-d12	*92*		*70 - 130*	*06/17/24 12:30*	*06/18/24 17:03*	*1*
Triphenylphosphate	*95*		*70 - 130*	*06/17/24 12:30*	*06/18/24 17:03*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:29	1

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP2

Date Collected: 06/12/24 11:00
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-2

Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*81*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C6 PFDA	*87*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C5 PFHxA	*87*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C4 PFHpA	*89*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C8 PFOA	*90*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C9 PFNA	*84*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C7 PFUnA	*76*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C2 PFDoA	*69*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C4 PFBA	*89*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C5 PFPeA	*98*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C3 PFBS	*107*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C3 PFHxS	*118*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C8 PFOS	*106*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C2-4:2-FTS	*145*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C2-6:2-FTS	*141*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*1*
13C2-8:2-FTS	*119*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:29*	*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		06/17/24 15:24	06/18/24 14:53	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 14:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*122*		*70 - 130*	*06/17/24 15:24*	*06/18/24 14:53*	*1*
13C2 PFHxA	*127*		*70 - 130*	*06/17/24 15:24*	*06/18/24 14:53*	*1*
13C2 PFDA	*125*		*70 - 130*	*06/17/24 15:24*	*06/18/24 14:53*	*1*
13C3-GenX	*119*		*70 - 130*	*06/17/24 15:24*	*06/18/24 14:53*	*1*

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

Date Collected: 06/12/24 11:30
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
2,4'-DDD	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
2,4'-DDE	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
2,4'-DDT	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
2-Methylnaphthalene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
4,4'-DDD	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
4,4'-DDE	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
4,4'-DDT	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Acenaphthene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Acenaphthylene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Acetochlor	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Alachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
alpha-BHC	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
alpha-Chlordane	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Anthracene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:23	1
Atrazine	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Benzo[a]pyrene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:23	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:23	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:23	1
beta-BHC	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		06/17/24 12:30	06/18/24 17:23	1
Bromacil	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Butachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/17/24 12:30	06/18/24 17:23	1
Chlorobenzilate	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Chloroneb	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Chlorpyrifos	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Chrysene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:23	1
delta-BHC	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		06/17/24 12:30	06/18/24 17:23	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Dieldrin	<0.0097		0.0097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Diethylphthalate	<0.49		0.49		ug/L		06/17/24 12:30	06/18/24 17:23	1
Dimethylphthalate	<0.49		0.49		ug/L		06/17/24 12:30	06/18/24 17:23	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		06/17/24 12:30	06/18/24 17:23	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Endosulfan II (Beta)	<0.097	^3+	0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Endosulfan sulfate	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Endrin	<0.0097		0.0097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Endrin aldehyde	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
EPTC	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Fluoranthene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
Date Collected: 06/12/24 11:30
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
gamma-Chlordane	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Heptachlor	<0.0097		0.0097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Heptachlor epoxide (isomer B)	<0.0097		0.0097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Isophorone	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Lindane	<0.0097		0.0097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Malathion	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Methoxychlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Metolachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Molinate	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Naphthalene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Parathion	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Phenanthrene	<0.039		0.039		ug/L		06/17/24 12:30	06/18/24 17:23	1
Propachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Pyrene	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Simazine	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Terbacil	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Terbuthylazine	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Thiobencarb	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		06/17/24 12:30	06/18/24 17:23	1
trans-Nonachlor	<0.049		0.049		ug/L		06/17/24 12:30	06/18/24 17:23	1
Trifluralin	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:23	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/17/24 12:30*	*06/18/24 17:23*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*98*		*70 - 130*	*06/17/24 12:30*	*06/18/24 17:23*	*1*
Perylene-d12	*95*		*70 - 130*	*06/17/24 12:30*	*06/18/24 17:23*	*1*
Triphenylphosphate	*101*		*70 - 130*	*06/17/24 12:30*	*06/18/24 17:23*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
Date Collected: 06/12/24 11:30
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*79*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C6 PFDA	*91*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C5 PFHxA	*88*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C4 PFHpA	*91*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C8 PFOA	*92*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C9 PFNA	*90*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C7 PFUnA	*86*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C2 PFDoA	*84*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C4 PFBA	*94*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C5 PFPeA	*100*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C3 PFBS	*107*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C3 PFHxS	*117*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C8 PFOS	*103*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C2-4:2-FTS	*156*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C2-6:2-FTS	*145*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*1*
13C2-8:2-FTS	*119*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:39*	*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		06/17/24 15:24	06/18/24 15:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1

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

Lab Sample ID: 380-99971-3

Date Collected: 06/12/24 11:30
Matrix: Water
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/17/24 15:24	06/18/24 15:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*123*		*70 - 130*	*06/17/24 15:24*	*06/18/24 15:02*	*1*
13C2 PFHxA	*126*		*70 - 130*	*06/17/24 15:24*	*06/18/24 15:02*	*1*
13C2 PFDA	*125*		*70 - 130*	*06/17/24 15:24*	*06/18/24 15:02*	*1*
13C3-GenX	*117*		*70 - 130*	*06/17/24 15:24*	*06/18/24 15:02*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-99971-4

Date Collected: 06/12/24 10:40
Matrix: Water
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
2,4'-DDD	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
2,4'-DDE	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
2,4'-DDT	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
2-Methylnaphthalene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
4,4'-DDD	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
4,4'-DDE	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
4,4'-DDT	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Acenaphthene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Acenaphthylene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Acetochlor	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Alachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
alpha-BHC	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
alpha-Chlordane	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Anthracene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:43	1
Atrazine	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Benz(a)anthracene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Benzo[a]pyrene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:43	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:43	1
Benzo[g,h,i]perylene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Date Collected: 06/12/24 10:40
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-4
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:43	1
beta-BHC	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		06/17/24 12:30	06/18/24 17:43	1
Bromacil	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Butachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Butylbenzylphthalate	<0.48		0.48		ug/L		06/17/24 12:30	06/18/24 17:43	1
Chlorobenzilate	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Chloroneb	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Chlorpyrifos	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Chrysene	<0.019		0.019		ug/L		06/17/24 12:30	06/18/24 17:43	1
delta-BHC	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		06/17/24 12:30	06/18/24 17:43	1
Dibenz(a,h)anthracene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Diclorvos (DDVP)	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Dieldrin	**0.043**		0.0097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Diethylphthalate	<0.48		0.48		ug/L		06/17/24 12:30	06/18/24 17:43	1
Dimethylphthalate	<0.48		0.48		ug/L		06/17/24 12:30	06/18/24 17:43	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		06/17/24 12:30	06/18/24 17:43	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Endosulfan II (Beta)	<0.097	^3+	0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Endosulfan sulfate	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Endrin	<0.0097		0.0097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Endrin aldehyde	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
EPTC	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Fluoranthene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Fluorene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
gamma-Chlordane	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Heptachlor	<0.0097		0.0097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Heptachlor epoxide (isomer B)	**0.017**		0.0097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Hexachlorobenzene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Hexachlorocyclopentadiene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Isophorone	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Lindane	<0.0097		0.0097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Malathion	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Methoxychlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Metolachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Molinate	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Naphthalene	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Parathion	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Phenanthrene	<0.039		0.039		ug/L		06/17/24 12:30	06/18/24 17:43	1
Propachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Pyrene	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Simazine	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Terbacil	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Terbuthylazine	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Date Collected: 06/12/24 10:40
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-4

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		06/17/24 12:30	06/18/24 17:43	1
trans-Nonachlor	<0.048		0.048		ug/L		06/17/24 12:30	06/18/24 17:43	1
Trifluralin	<0.097		0.097		ug/L		06/17/24 12:30	06/18/24 17:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/17/24 12:30*	*06/18/24 17:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*97*		*70 - 130*	*06/17/24 12:30*	*06/18/24 17:43*	*1*
Perylene-d12	*97*		*70 - 130*	*06/17/24 12:30*	*06/18/24 17:43*	*1*
Triphenylphosphate	*102*		*70 - 130*	*06/17/24 12:30*	*06/18/24 17:43*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluorohexanesulfonic acid (PFHxS)	**2.4**		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluorohexanoic acid (PFHxA)	**2.2**		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluorooctanesulfonic acid (PFOS)	**2.4**		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluoropentanoic acid (PFPeA)	**2.4**		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-99971-4

Date Collected: 06/12/24 10:40
Matrix: Water
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 18:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*79*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C6 PFDA	*85*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C5 PFHxA	*83*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C4 PFHpA	*85*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C8 PFOA	*81*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C9 PFNA	*80*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C7 PFUnA	*85*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C2 PFDoA	*83*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C4 PFBA	*95*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C5 PFPeA	*104*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C3 PFBS	*107*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C3 PFHxS	*118*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C8 PFOS	*106*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C2-4:2-FTS	*156*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C2-6:2-FTS	*149*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*
13C2-8:2-FTS	*121*		*50 - 200*	*06/16/24 11:15*	*06/17/24 18:58*	*1*

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-99971-5

Date Collected: 06/12/24 10:10
Matrix: Water
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-99971-5
Date Collected: 06/12/24 10:10
Matrix: Water
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*91*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C6 PFDA	*104*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C5 PFHxA	*100*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C4 PFHpA	*108*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C8 PFOA	*110*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C9 PFNA	*107*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C7 PFUnA	*97*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C2 PFDoA	*94*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C4 PFBA	*103*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C5 PFPeA	*112*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C3 PFBS	*106*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C3 PFHxS	*116*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C8 PFOS	*105*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C2-4:2-FTS	*141*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C2-6:2-FTS	*139*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*
13C2-8:2-FTS	*112*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:08*	*1*

Client Sample ID: FB AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-99971-6
Date Collected: 06/12/24 11:00
Matrix: Water
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1

Client Sample ID: FB AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-99971-6

Date Collected: 06/12/24 11:00
Matrix: Water
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*98*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C6 PFDA	*103*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C5 PFHxA	*103*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C4 PFHpA	*111*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C8 PFOA	*110*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C9 PFNA	*102*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C7 PFUnA	*94*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C2 PFDoA	*95*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C4 PFBA	*106*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C5 PFPeA	*112*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C3 PFBS	*107*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C3 PFHxS	*122*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C8 PFOS	*108*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C2-4:2-FTS	*138*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C2-6:2-FTS	*141*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*
13C2-8:2-FTS	*122*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:17*	*1*

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

Lab Sample ID: 380-99971-7

Date Collected: 06/12/24 11:30
Matrix: Water
Date Received: 06/14/24 09:39

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260)
Date Collected: 06/12/24 11:30
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-7
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*98*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C6 PFDA	*105*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C5 PFHxA	*107*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C4 PFHpA	*117*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C8 PFOA	*111*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C9 PFNA	*111*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C7 PFUnA	*101*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C2 PFDoA	*98*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C4 PFBA	*104*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C5 PFPeA	*110*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C3 PFBS	*111*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C3 PFHxS	*119*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C8 PFOS	*109*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C2-4:2-FTS	*145*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C2-6:2-FTS	*142*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*
13C2-8:2-FTS	*120*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:27*	*1*

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2
Date Collected: 06/12/24 10:40
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-8
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/16/24 11:15	06/17/24 19:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*97*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C6 PFDA	*105*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C5 PFHxA	*99*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C4 PFHpA	*111*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C8 PFOA	*113*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C9 PFNA	*106*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C7 PFUnA	*100*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C2 PFDoA	*97*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C4 PFBA	*103*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C5 PFPeA	*108*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C3 PFBS	*105*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C3 PFHxS	*118*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*
13C8 PFOS	*103*		*50 - 200*	*06/16/24 11:15*	*06/17/24 19:36*	*1*

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2
Date Collected: 06/12/24 10:40
Date Received: 06/14/24 09:39

Lab Sample ID: 380-99971-8
Matrix: Water

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	141		50 - 200	06/16/24 11:15	06/17/24 19:36	1
13C2-6:2-FTS	130		50 - 200	06/16/24 11:15	06/17/24 19:36	1
13C2-8:2-FTS	114		50 - 200	06/16/24 11:15	06/17/24 19:36	1

Action Limit Summary

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-99971-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	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	<0.0098		ug/L	2	0.0098	525.2	Total/NA
Heptachlor	<0.0098		ug/L	0.4	0.0098	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.0098		ug/L	0.2	0.0098	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.0098		ug/L	0.2	0.0098	525.2	Total/NA
Methoxychlor	<0.049		ug/L	40	0.049	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP2 — Lab Sample ID: 380-99971-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.0096		ug/L	2	0.0096	525.2	Total/NA
Heptachlor	<0.0096		ug/L	0.4	0.0096	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.0096		ug/L	0.2	0.0096	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048		ug/L	50	0.048	525.2	Total/NA
Lindane	<0.0096		ug/L	0.2	0.0096	525.2	Total/NA
Methoxychlor	<0.048		ug/L	40	0.048	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP2 (Continued) — Lab Sample ID: 380-99971-2

Compliance Check

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

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

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) — Lab Sample ID: 380-99971-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.0097		ug/L	2	0.0097	525.2	Total/NA
Heptachlor	<0.0097		ug/L	0.4	0.0097	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.0097		ug/L	0.2	0.0097	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.0097		ug/L	0.2	0.0097	525.2	Total/NA
Methoxychlor	<0.049		ug/L	40	0.049	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Action Limit Summary

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 — Lab Sample ID: 380-99971-4

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.0097		ug/L	2	0.0097	525.2	Total/NA
Heptachlor	<0.0097		ug/L	0.4	0.0097	525.2	Total/NA
Heptachlor epoxide (isomer B)	0.017		ug/L	0.2	0.0097	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048		ug/L	50	0.048	525.2	Total/NA
Lindane	<0.0097		ug/L	0.2	0.0097	525.2	Total/NA
Methoxychlor	<0.048		ug/L	40	0.048	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.4		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA

Client Sample ID: FB MOANALUA WELLS — Lab Sample ID: 380-99971-5

Compliance Check

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

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

Client Sample ID: FB AIEA GULCH WELLS PUMP2 — Lab Sample ID: 380-99971-6

Compliance Check

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

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

Action Limit Summary

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) — Lab Sample ID: 380-99971-7

Compliance Check

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

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

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 — Lab Sample ID: 380-99971-8

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-99951-E-2-A MS	Matrix Spike	99	90	110
380-99960-E-1-A DU	Duplicate	100	100	116
380-99971-1	MOANALUA WELLS	98	94	104
380-99971-2	AIEA GULCH WELLS PUMP2	98	92	95
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	98	95	101
380-99971-4	HALAWA WELLS UNITS 1 & 2	97	97	102
LCS 380-95314/23-A	Lab Control Sample	100	94	111
MB 380-95314/20-A	Method Blank	101	100	105
MRL 380-95314/21-A	Lab Control Sample	100	90	97
MRL 380-95314/22-A	Lab Control Sample	101	92	98

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-99960-B-6-A LMS	Matrix Spike	106	111	110	101
380-99960-C-6-A LMSD	Matrix Spike Duplicate	105	115	120	103
380-99971-1	MOANALUA WELLS	117	123	125	112
380-99971-2	AIEA GULCH WELLS PUMP2	122	127	125	119
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	123	126	125	117
LCS 380-95387/22-A	Lab Control Sample	113	112	121	112
MBL 380-95387/20-A	Method Blank	111	114	117	108
MRL 380-95387/21-A	Lab Control Sample	116	114	122	111

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: 380-99971-1
SDG: 525.2, 533, 537.1

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	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-99944-B-1-A MS	Matrix Spike	80	72	83	86	77	66	75	77
380-99944-C-1-A MSD	Matrix Spike Duplicate	86	99	93	101	101	96	90	88
380-99971-1	MOANALUA WELLS	85	97	91	99	102	100	90	90
380-99971-2	AIEA GULCH WELLS PUMP2	81	87	87	89	90	84	76	69
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	79	91	88	91	92	90	86	84
380-99971-4	HALAWA WELLS UNITS 1 & 2	79	85	83	85	81	80	85	83
380-99971-5	FB MOANALUA WELLS	91	104	100	108	110	107	97	94
380-99971-6	FB AIEA GULCH WELLS PUMP	98	103	103	111	110	102	94	95
380-99971-7	FB AIEA WELLS PUMPS 1&2 (260)	98	105	107	117	111	111	101	98
380-99971-8	FB HALAWA WELLS UNITS 1 & 2	97	105	99	111	113	106	100	97
LCS 380-95178/22-A	Lab Control Sample	95	103	98	107	107	103	96	98
MBL 380-95178/20-A	Method Blank	89	103	105	110	108	103	94	97
MRL 380-95178/21-A	Lab Control Sample	87	104	103	111	106	104	94	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-99944-B-1-A MS	Matrix Spike	93	113	106	115	104	140	138	118
380-99944-C-1-A MSD	Matrix Spike Duplicate	99	119	104	115	102	141	131	116
380-99971-1	MOANALUA WELLS	100	108	106	117	107	131	153	122
380-99971-2	AIEA GULCH WELLS PUMP2	89	98	107	118	106	145	141	119
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	94	100	107	117	103	156	145	119
380-99971-4	HALAWA WELLS UNITS 1 & 2	95	104	107	118	106	156	149	121
380-99971-5	FB MOANALUA WELLS	103	112	106	116	105	141	139	112
380-99971-6	FB AIEA GULCH WELLS PUMP	106	112	107	122	108	138	141	122
380-99971-7	FB AIEA WELLS PUMPS 1&2 (260)	104	110	111	119	109	145	142	120
380-99971-8	FB HALAWA WELLS UNITS 1 & 2	103	108	105	118	103	141	130	114
LCS 380-95178/22-A	Lab Control Sample	106	111	105	114	103	130	131	120
MBL 380-95178/20-A	Method Blank	101	108	106	116	102	138	130	113
MRL 380-95178/21-A	Lab Control Sample	105	109	105	117	103	136	136	116

Surrogate Legend

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

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

Lab Sample ID: MB 380-95314/20-A
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95314

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
2,4'-DDD	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
2,4'-DDE	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
2,4'-DDT	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
2-Methylnaphthalene	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
4,4'-DDD	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
4,4'-DDE	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
4,4'-DDT	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Acenaphthene	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Acenaphthylene	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Acetochlor	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Alachlor	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
alpha-BHC	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
alpha-Chlordane	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Anthracene	<0.020		0.020		ug/L		06/17/24 09:00	06/18/24 15:43	1
Atrazine	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Benz(a)anthracene	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/17/24 09:00	06/18/24 15:43	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/17/24 09:00	06/18/24 15:43	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/17/24 09:00	06/18/24 15:43	1
beta-BHC	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60		ug/L		06/17/24 09:00	06/18/24 15:43	1
Bromacil	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Butachlor	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Butylbenzylphthalate	<0.50		0.50		ug/L		06/17/24 09:00	06/18/24 15:43	1
Chlorobenzilate	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Chloroneb	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Chlorpyrifos	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Chrysene	<0.020		0.020		ug/L		06/17/24 09:00	06/18/24 15:43	1
delta-BHC	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Di(2-ethylhexyl)adipate	<0.60		0.60		ug/L		06/17/24 09:00	06/18/24 15:43	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Dieldrin	<0.0099		0.0099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Diethylphthalate	<0.50		0.50		ug/L		06/17/24 09:00	06/18/24 15:43	1
Dimethylphthalate	<0.50		0.50		ug/L		06/17/24 09:00	06/18/24 15:43	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		06/17/24 09:00	06/18/24 15:43	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Endosulfan sulfate	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Endrin	<0.0099		0.0099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Endrin aldehyde	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
EPTC	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1

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

Lab Sample ID: MB 380-95314/20-A
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95314

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Fluorene	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
gamma-Chlordane	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Heptachlor	<0.0099		0.0099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Heptachlor epoxide (isomer B)	<0.0099		0.0099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Hexachlorobenzene	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Isophorone	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Lindane	<0.0099		0.0099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Malathion	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Methoxychlor	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Metolachlor	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Molinate	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Naphthalene	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Parathion	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Phenanthrene	<0.040		0.040		ug/L		06/17/24 09:00	06/18/24 15:43	1
Propachlor	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Pyrene	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Simazine	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Terbacil	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Terbuthylazine	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Thiobencarb	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/17/24 09:00	06/18/24 15:43	1
trans-Nonachlor	<0.050		0.050		ug/L		06/17/24 09:00	06/18/24 15:43	1
Trifluralin	<0.099		0.099		ug/L		06/17/24 09:00	06/18/24 15:43	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Camphene	*0.874*	*T J N*	*ug/L*		*2.28*	*79-92-5*	*06/17/24 09:00*	*06/18/24 15:43*	*1*
Decane	*1.53*	*T J N*	*ug/L*		*2.36*	*124-18-5*	*06/17/24 09:00*	*06/18/24 15:43*	*1*
Cyclopentasiloxane, decamethyl-	*0.498*	*T J N*	*ug/L*		*2.63*	*541-02-6*	*06/17/24 09:00*	*06/18/24 15:43*	*1*
n-Hexadecanoic acid	*0.883*	*T J N*	*ug/L*		*5.76*	*57-10-3*	*06/17/24 09:00*	*06/18/24 15:43*	*1*
Oleic Acid	*0.681*	*T J N*	*ug/L*		*6.36*	*112-80-1*	*06/17/24 09:00*	*06/18/24 15:43*	*1*
Octadecanoic acid	*0.504*	*T J N*	*ug/L*		*6.43*	*57-11-4*	*06/17/24 09:00*	*06/18/24 15:43*	*1*
9-Octadecenamide, (Z)-	*1.59*	*T J N*	*ug/L*		*7.39*	*301-02-0*	*06/17/24 09:00*	*06/18/24 15:43*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*101*		*70 - 130*	*06/17/24 09:00*	*06/18/24 15:43*	*1*
Perylene-d12	*100*		*70 - 130*	*06/17/24 09:00*	*06/18/24 15:43*	*1*
Triphenylphosphate	*105*		*70 - 130*	*06/17/24 09:00*	*06/18/24 15:43*	*1*

Lab Sample ID: LCS 380-95314/23-A
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95314

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			1.98	2.03		ug/L		102	70 - 130		

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

Lab Sample ID: LCS 380-95314/23-A
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95314

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.98	2.05		ug/L		104	70 - 130
2,4'-DDE	1.98	1.92		ug/L		97	70 - 130
2,4'-DDT	1.98	2.16		ug/L		109	70 - 130
2,4-Dinitrotoluene	1.98	2.01		ug/L		102	70 - 130
2,6-Dinitrotoluene	1.98	1.98		ug/L		100	70 - 130
2-Methylnaphthalene	1.98	2.13		ug/L		108	70 - 130
4,4'-DDD	1.98	2.15		ug/L		108	70 - 130
4,4'-DDE	1.98	2.11		ug/L		106	70 - 130
4,4'-DDT	1.98	2.10		ug/L		106	70 - 130
Acenaphthene	1.98	1.91		ug/L		96	70 - 130
Acenaphthylene	1.98	2.09		ug/L		106	70 - 130
Acetochlor	1.98	2.33		ug/L		117	70 - 130
Alachlor	1.98	2.21		ug/L		112	70 - 130
alpha-BHC	1.98	2.12		ug/L		107	70 - 130
alpha-Chlordane	1.98	2.19		ug/L		111	70 - 130
Anthracene	1.98	1.76		ug/L		89	70 - 130
Atrazine	1.98	2.14		ug/L		108	70 - 130
Benz(a)anthracene	1.98	2.01		ug/L		101	70 - 130
Benzo[a]pyrene	1.98	2.02		ug/L		102	70 - 130
Benzo[b]fluoranthene	1.98	2.29		ug/L		116	70 - 130
Benzo[g,h,i]perylene	1.98	2.26		ug/L		114	70 - 130
Benzo[k]fluoranthene	1.98	2.23		ug/L		112	70 - 130
beta-BHC	1.98	2.19		ug/L		111	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	2.55		ug/L		128	70 - 130
Bromacil	1.98	2.13		ug/L		108	70 - 130
Butachlor	1.98	2.25		ug/L		114	70 - 130
Butylbenzylphthalate	1.98	2.22		ug/L		112	70 - 130
Chlorobenzilate	1.98	2.39		ug/L		121	70 - 130
Chloroneb	1.98	2.00		ug/L		101	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.06		ug/L		104	70 - 130
Chlorpyrifos	1.98	2.06		ug/L		104	70 - 130
Chrysene	1.98	2.10		ug/L		106	70 - 130
delta-BHC	1.98	2.11		ug/L		106	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.38		ug/L		120	70 - 130
Dibenz(a,h)anthracene	1.98	2.36		ug/L		119	70 - 130
Diclorvos (DDVP)	1.98	2.26		ug/L		114	70 - 130
Dieldrin	1.98	1.98		ug/L		100	70 - 130
Diethylphthalate	1.98	2.14		ug/L		108	70 - 130
Dimethylphthalate	1.98	2.21		ug/L		112	70 - 130
Di-n-butyl phthalate	3.96	4.22		ug/L		106	70 - 130
Di-n-octyl phthalate	1.98	2.34		ug/L		118	70 - 130
Endosulfan I (Alpha)	1.98	2.14		ug/L		108	70 - 130
Endosulfan II (Beta)	1.98	2.23		ug/L		113	70 - 130
Endosulfan sulfate	1.98	2.08		ug/L		105	70 - 130
Endrin	1.98	1.86		ug/L		94	70 - 130
Endrin aldehyde	1.98	1.70		ug/L		86	60 - 130
EPTC	1.98	2.25		ug/L		113	70 - 130
Fluoranthene	1.98	2.17		ug/L		110	70 - 130
Fluorene	1.98	2.09		ug/L		106	70 - 130

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

Lab Sample ID: LCS 380-95314/23-A
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95314

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
gamma-Chlordane	1.98	2.29		ug/L		115	70 - 130
Heptachlor	1.98	2.07		ug/L		105	70 - 130
Heptachlor epoxide (isomer B)	1.98	2.41		ug/L		122	70 - 130
Hexachlorobenzene	1.98	2.01		ug/L		102	70 - 130
Hexachlorocyclopentadiene	1.98	1.80		ug/L		91	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	2.42		ug/L		122	70 - 130
Isophorone	1.98	2.24		ug/L		113	70 - 130
Lindane	1.98	2.08		ug/L		105	70 - 130
Malathion	1.98	2.15		ug/L		109	70 - 130
Methoxychlor	1.98	2.29		ug/L		115	70 - 130
Metolachlor	1.98	2.16		ug/L		109	70 - 130
Molinate	1.98	2.28		ug/L		115	70 - 130
Naphthalene	1.98	2.06		ug/L		104	70 - 130
Parathion	1.98	2.31		ug/L		116	70 - 130
Pendimethalin (Penoxaline)	1.98	1.92		ug/L		97	70 - 130
Phenanthrene	1.98	1.98		ug/L		100	70 - 130
Propachlor	1.98	2.13		ug/L		107	70 - 130
Pyrene	1.98	2.02		ug/L		102	70 - 130
Simazine	1.98	2.25		ug/L		113	70 - 130
Terbacil	1.98	2.22		ug/L		112	70 - 130
Terbuthylazine	1.98	2.21		ug/L		111	70 - 130
Thiobencarb	1.98	2.23		ug/L		112	70 - 130
trans-Nonachlor	1.98	2.14		ug/L		108	70 - 130
Trifluralin	1.98	1.92		ug/L		97	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Perylene-d12	*94*		*70 - 130*
Triphenylphosphate	*111*		*70 - 130*

Lab Sample ID: MRL 380-95314/21-A
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95314

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0991	0.116		ug/L		117	50 - 150
2,4'-DDD	0.0991	0.110		ug/L		111	50 - 150
2,4'-DDE	0.0991	0.110		ug/L		111	50 - 150
2,4'-DDT	0.0991	0.0935	J	ug/L		94	50 - 150
2,4-Dinitrotoluene	0.0991	0.0969	J	ug/L		98	50 - 150
2,6-Dinitrotoluene	0.0991	0.0935	J	ug/L		94	50 - 150
2-Methylnaphthalene	0.0991	0.115		ug/L		116	50 - 150
4,4'-DDD	0.0991	0.109		ug/L		110	50 - 150
4,4'-DDE	0.0991	0.0946	J	ug/L		95	50 - 150
4,4'-DDT	0.0991	0.109		ug/L		110	50 - 150
Acenaphthene	0.0991	0.0978	J	ug/L		99	50 - 150
Acenaphthylene	0.0991	0.101		ug/L		102	50 - 150
Acetochlor	0.0496	0.0558	J	ug/L		113	50 - 150

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

Lab Sample ID: MRL 380-95314/21-A
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95314

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Alachlor	0.0496	0.0609		ug/L		123	50 - 150
alpha-BHC	0.0991	0.110		ug/L		111	50 - 150
alpha-Chlordane	0.0248	<0.029		ug/L		102	50 - 150
Anthracene	0.0198	0.0221		ug/L		112	50 - 150
Atrazine	0.0496	0.0503		ug/L		101	50 - 150
Benz(a)anthracene	0.0496	0.0574		ug/L		116	50 - 150
Benzo[a]pyrene	0.0198	0.0202		ug/L		102	50 - 150
Benzo[b]fluoranthene	0.0198	0.0213		ug/L		107	50 - 150
Benzo[g,h,i]perylene	0.0496	0.0572		ug/L		115	50 - 150
Benzo[k]fluoranthene	0.0198	0.0190	J	ug/L		96	50 - 150
beta-BHC	0.0991	0.107		ug/L		108	50 - 150
Bis(2-ethylhexyl) phthalate	0.595	0.705		ug/L		119	50 - 150
Bromacil	0.0991	0.0999		ug/L		101	50 - 150
Butachlor	0.0496	0.0591		ug/L		119	50 - 150
Butylbenzylphthalate	0.149	0.163	J	ug/L		110	50 - 150
Chlorobenzilate	0.0991	0.0928	J	ug/L		94	50 - 150
Chloroneb	0.0991	0.109		ug/L		110	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0991	0.103		ug/L		104	50 - 150
Chlorpyrifos	0.0496	0.0569		ug/L		115	50 - 150
Chrysene	0.0198	0.0226		ug/L		114	50 - 150
delta-BHC	0.0991	0.120		ug/L		121	50 - 150
Di(2-ethylhexyl)adipate	0.297	0.360	J	ug/L		121	50 - 150
Dibenz(a,h)anthracene	0.0496	0.0592		ug/L		119	50 - 150
Diclorvos (DDVP)	0.0496	0.0656		ug/L		132	50 - 150
Diethylphthalate	0.149	0.171	J	ug/L		115	50 - 150
Dimethylphthalate	0.297	0.310	J	ug/L		104	50 - 150
Di-n-butyl phthalate	0.297	0.329	J	ug/L		111	49 - 243
Di-n-octyl phthalate	0.0991	0.114		ug/L		115	50 - 150
Endosulfan I (Alpha)	0.0991	0.0897	J	ug/L		90	50 - 150
Endosulfan II (Beta)	0.0991	0.152	^3+	ug/L		153	50 - 150
Endosulfan sulfate	0.0991	0.0986	J	ug/L		100	50 - 150
Endrin aldehyde	0.0991	0.0938	J	ug/L		95	50 - 150
EPTC	0.0991	0.107		ug/L		108	50 - 150
Fluoranthene	0.0496	0.0529	J	ug/L		107	50 - 150
Fluorene	0.0496	0.0511		ug/L		103	50 - 150
gamma-Chlordane	0.0248	0.0244	J	ug/L		99	50 - 150
Hexachlorobenzene	0.0496	0.0433	J	ug/L		87	50 - 150
Hexachlorocyclopentadiene	0.0496	0.0463	J	ug/L		94	50 - 150
Indeno[1,2,3-cd]pyrene	0.0496	0.0586		ug/L		118	50 - 150
Isophorone	0.0991	0.115		ug/L		117	50 - 150
Malathion	0.0991	0.107		ug/L		108	50 - 150
Methoxychlor	0.0991	0.115		ug/L		116	50 - 150
Metolachlor	0.0496	0.0589		ug/L		119	50 - 150
Molinate	0.0991	0.110		ug/L		111	50 - 150
Naphthalene	0.0991	0.110		ug/L		111	50 - 150
Parathion	0.0991	0.107		ug/L		107	50 - 150
Pendimethalin (Penoxaline)	0.0991	0.100		ug/L		101	50 - 150
Phenanthrene	0.0198	0.0212	J	ug/L		107	50 - 150
Propachlor	0.0496	0.0550		ug/L		111	50 - 150

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

Lab Sample ID: MRL 380-95314/21-A
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95314

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Pyrene			0.0496	0.0528		ug/L		106	50 - 150		
Simazine			0.0496	0.0508		ug/L		103	50 - 150		
Terbacil			0.0991	0.0981	J	ug/L		99	50 - 150		
Terbuthylazine			0.0991	0.105		ug/L		106	50 - 150		
Thiobencarb			0.0991	0.106		ug/L		107	50 - 150		
trans-Nonachlor			0.0248	<0.026		ug/L		97	50 - 150		
Trifluralin			0.0991	0.100		ug/L		101	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Perylene-d12	*90*		*70 - 130*
Triphenylphosphate	*97*		*70 - 130*

Lab Sample ID: MRL 380-95314/22-A
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95314

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Dieldrin			0.00992	0.00877	J	ug/L		88	50 - 150		
Endrin			0.00992	0.0122		ug/L		123	50 - 150		
Heptachlor			0.00992	0.0101		ug/L		101	50 - 150		
Heptachlor epoxide (isomer B)			0.00992	0.0117		ug/L		118	50 - 150		
Lindane			0.00992	0.0101		ug/L		101	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*101*		*70 - 130*
Perylene-d12	*92*		*70 - 130*
Triphenylphosphate	*98*		*70 - 130*

Lab Sample ID: 380-99951-E-2-A MS
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 95314

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene	<0.10		1.99	2.04		ug/L		103	70 - 130		
2,4'-DDD	<0.10		1.99	2.05		ug/L		103	70 - 130		
2,4'-DDE	<0.10		1.99	1.90		ug/L		95	70 - 130		
2,4'-DDT	<0.10		1.99	2.13		ug/L		107	70 - 130		
2,4-Dinitrotoluene	<0.10		1.99	2.08		ug/L		105	70 - 130		
2,6-Dinitrotoluene	<0.10		1.99	2.07		ug/L		104	70 - 130		
2-Methylnaphthalene	<0.10		1.99	2.12		ug/L		107	70 - 130		
4,4'-DDD	<0.10		1.99	2.11		ug/L		106	70 - 130		
4,4'-DDE	<0.10		1.99	2.10		ug/L		106	70 - 130		
4,4'-DDT	<0.10		1.99	2.04		ug/L		102	70 - 130		
Acenaphthene	<0.10		1.99	1.92		ug/L		97	70 - 130		
Acenaphthylene	<0.10		1.99	2.14		ug/L		108	70 - 130		
Acetochlor	<0.10		1.99	2.30		ug/L		116	70 - 130		
Alachlor	<0.050		1.99	2.13		ug/L		107	70 - 130		

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

Lab Sample ID: 380-99951-E-2-A MS
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 95314

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
alpha-BHC	<0.10		1.99	2.15		ug/L		108	70 - 130
alpha-Chlordane	<0.050		1.99	2.17		ug/L		109	70 - 130
Anthracene	<0.020		1.99	1.70		ug/L		86	70 - 130
Atrazine	<0.050		1.99	2.19		ug/L		110	70 - 130
Benz(a)anthracene	<0.050		1.99	1.98		ug/L		100	70 - 130
Benzo[a]pyrene	<0.020		1.99	1.97		ug/L		99	70 - 130
Benzo[b]fluoranthene	<0.020		1.99	2.13		ug/L		107	70 - 130
Benzo[g,h,i]perylene	<0.050		1.99	1.97		ug/L		99	70 - 130
Benzo[k]fluoranthene	<0.020		1.99	2.15		ug/L		108	70 - 130
beta-BHC	<0.10		1.99	2.17		ug/L		109	70 - 130
Bis(2-ethylhexyl) phthalate	<0.60	F1	1.99	2.60	F1	ug/L		131	70 - 130
Bromacil	<0.10		1.99	2.14		ug/L		108	70 - 130
Butachlor	<0.050		1.99	2.22		ug/L		112	70 - 130
Butylbenzylphthalate	<0.50		1.99	2.24		ug/L		113	70 - 130
Chlorobenzilate	<0.10		1.99	2.25		ug/L		113	70 - 130
Chloroneb	<0.10		1.99	2.01		ug/L		101	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.10		1.99	2.05		ug/L		103	70 - 130
Chlorpyrifos	<0.050		1.99	2.00		ug/L		101	70 - 130
Chrysene	<0.020		1.99	2.04		ug/L		103	70 - 130
delta-BHC	<0.10		1.99	2.06		ug/L		104	70 - 130
Di(2-ethylhexyl)adipate	<0.60		1.99	2.41		ug/L		122	70 - 130
Dibenz(a,h)anthracene	<0.050		1.99	2.17		ug/L		109	70 - 130
Diclorvos (DDVP)	<0.050		1.99	2.25		ug/L		113	70 - 130
Dieldrin	<0.010		1.99	1.99		ug/L		100	70 - 130
Diethylphthalate	<0.50		1.99	2.21		ug/L		111	70 - 130
Dimethylphthalate	<0.50		1.99	2.24		ug/L		113	70 - 130
Di-n-butyl phthalate	<1.0		3.97	4.22		ug/L		106	70 - 130
Di-n-octyl phthalate	<0.10		1.99	2.31		ug/L		117	70 - 130
Endosulfan I (Alpha)	<0.10		1.99	2.02		ug/L		102	70 - 130
Endosulfan II (Beta)	<0.10	^3+	1.99	2.17		ug/L		109	70 - 130
Endosulfan sulfate	<0.10		1.99	2.03		ug/L		102	70 - 130
Endrin	<0.010		1.99	1.82		ug/L		91	70 - 130
Endrin aldehyde	<0.10		1.99	1.61		ug/L		81	60 - 130
EPTC	<0.10		1.99	2.24		ug/L		113	70 - 130
Fluoranthene	<0.10		1.99	2.14		ug/L		108	70 - 130
Fluorene	<0.050		1.99	2.10		ug/L		106	70 - 130
gamma-Chlordane	<0.050		1.99	2.21		ug/L		111	70 - 130
Heptachlor	<0.010		1.99	2.02		ug/L		102	70 - 130
Heptachlor epoxide (isomer B)	<0.010		1.99	2.31		ug/L		116	70 - 130
Hexachlorobenzene	<0.050		1.99	2.01		ug/L		101	70 - 130
Hexachlorocyclopentadiene	<0.050		1.99	1.77		ug/L		89	70 - 130
Indeno[1,2,3-cd]pyrene	<0.050		1.99	2.16		ug/L		109	70 - 130
Isophorone	<0.10		1.99	2.19		ug/L		111	70 - 130
Lindane	<0.010		1.99	2.10		ug/L		106	70 - 130
Malathion	<0.10		1.99	2.20		ug/L		111	70 - 130
Methoxychlor	<0.050		1.99	2.18		ug/L		110	70 - 130
Metolachlor	<0.050		1.99	2.29		ug/L		115	70 - 130
Molinate	<0.10		1.99	2.28		ug/L		115	70 - 130
Naphthalene	<0.10		1.99	2.04		ug/L		103	70 - 130

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

Lab Sample ID: 380-99951-E-2-A MS
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 95314

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Parathion	<0.10		1.99	2.39		ug/L		120	70 - 130
Pendimethalin (Penoxaline)	<0.10		1.99	1.98		ug/L		100	70 - 130
Phenanthrene	<0.040		1.99	1.96		ug/L		98	70 - 130
Propachlor	<0.050		1.99	2.23		ug/L		112	70 - 130
Pyrene	<0.050		1.99	2.00		ug/L		101	70 - 130
Simazine	<0.050		1.99	2.31		ug/L		116	70 - 130
Terbacil	<0.10		1.99	2.23		ug/L		112	70 - 130
Terbuthylazine	<0.10		1.99	2.25		ug/L		113	70 - 130
Thiobencarb	<0.10		1.99	2.19		ug/L		111	70 - 130
trans-Nonachlor	<0.050		1.99	2.09		ug/L		105	70 - 130
Trifluralin	<0.10		1.99	1.92		ug/L		97	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*99*		*70 - 130*
Perylene-d12	*90*		*70 - 130*
Triphenylphosphate	*110*		*70 - 130*

Lab Sample ID: 380-99960-E-1-A DU
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 95314

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.098		<0.098		ug/L		NC	20
2,4'-DDD	<0.098		<0.098		ug/L		NC	20
2,4'-DDE	<0.098		<0.098		ug/L		NC	20
2,4'-DDT	<0.098		<0.098		ug/L		NC	20
2,4-Dinitrotoluene	<0.098		<0.098		ug/L		NC	20
2,6-Dinitrotoluene	<0.098		<0.098		ug/L		NC	20
2-Methylnaphthalene	<0.098		<0.098		ug/L		NC	20
4,4'-DDD	<0.098		<0.098		ug/L		NC	20
4,4'-DDE	<0.098		<0.098		ug/L		NC	20
4,4'-DDT	<0.098		<0.098		ug/L		NC	20
Acenaphthene	<0.098		<0.098		ug/L		NC	20
Acenaphthylene	<0.098		<0.098		ug/L		NC	20
Acetochlor	<0.098		<0.098		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.098		<0.098		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		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	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.098		<0.098		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.098		<0.098		ug/L		NC	20

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

Lab Sample ID: 380-99960-E-1-A DU
Matrix: Water
Analysis Batch: 95490

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 95314

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Butachlor	<0.049			<0.049		ug/L				NC	20
Butylbenzylphthalate	<0.49			<0.49		ug/L				NC	20
Chlorobenzilate	<0.098			<0.098		ug/L				NC	20
Chloroneb	<0.098			<0.098		ug/L				NC	20
Chlorothalonil (Draconil, Bravo)	<0.098			<0.098		ug/L				NC	20
Chlorpyrifos	<0.049			<0.049		ug/L				NC	20
Chrysene	<0.020			<0.020		ug/L				NC	20
delta-BHC	<0.098			<0.098		ug/L				NC	20
Di(2-ethylhexyl)adipate	<0.59			<0.59		ug/L				NC	20
Dibenz(a,h)anthracene	<0.049			<0.049		ug/L				NC	20
Diclorvos (DDVP)	<0.049			<0.049		ug/L				NC	20
Dieldrin	<0.0098			<0.0098		ug/L				NC	20
Diethylphthalate	<0.49			<0.49		ug/L				NC	20
Dimethylphthalate	<0.49			<0.49		ug/L				NC	20
Di-n-butyl phthalate	<0.98			<0.98		ug/L				NC	20
Di-n-octyl phthalate	<0.098			<0.098		ug/L				NC	20
Endosulfan I (Alpha)	<0.098			<0.098		ug/L				NC	20
Endosulfan II (Beta)	<0.098	^3+		<0.098		ug/L				NC	20
Endosulfan sulfate	<0.098			<0.098		ug/L				NC	20
Endrin	<0.0098			<0.0098		ug/L				NC	20
Endrin aldehyde	<0.098			<0.098		ug/L				NC	20
EPTC	<0.098			<0.098		ug/L				NC	20
Fluoranthene	<0.098			<0.098		ug/L				NC	20
Fluorene	<0.049			<0.049		ug/L				NC	20
gamma-Chlordane	<0.049			<0.049		ug/L				NC	20
Heptachlor	<0.0098			<0.0098		ug/L				NC	20
Heptachlor epoxide (isomer B)	<0.0098			<0.0098		ug/L				NC	20
Hexachlorobenzene	<0.049			<0.049		ug/L				NC	20
Hexachlorocyclopentadiene	<0.049			<0.049		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	<0.049			<0.049		ug/L				NC	20
Isophorone	<0.098			<0.098		ug/L				NC	20
Lindane	<0.0098			<0.0098		ug/L				NC	20
Malathion	<0.098			<0.098		ug/L				NC	20
Methoxychlor	<0.049			<0.049		ug/L				NC	20
Metolachlor	<0.049			<0.049		ug/L				NC	20
Molinate	<0.098			<0.098		ug/L				NC	20
Naphthalene	<0.098			<0.098		ug/L				NC	20
Parathion	<0.098			<0.098		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.098			<0.098		ug/L				NC	20
Phenanthrene	<0.039			<0.039		ug/L				NC	20
Propachlor	<0.049			<0.049		ug/L				NC	20
Pyrene	<0.049			<0.049		ug/L				NC	20
Simazine	<0.049			<0.049		ug/L				NC	20
Terbacil	<0.098			<0.098		ug/L				NC	20
Terbuthylazine	<0.098			<0.098		ug/L				NC	20
Thiobencarb	<0.098			<0.098		ug/L				NC	20
Total Permethrin (mixed isomers)	<0.20			<0.20		ug/L				NC	20
trans-Nonachlor	<0.049			<0.049		ug/L				NC	20
Trifluralin	<0.098			<0.098		ug/L				NC	20

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

Surrogate	DU %Recovery	DU Qualifier	Limits
2-Nitro-m-xylene	100		70 - 130
Perylene-d12	100		70 - 130
Triphenylphosphate	116		70 - 130

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

Lab Sample ID: MBL 380-95178/20-A
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95178

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		06/16/24 11:15	06/17/24 16:25	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C6 PFDA	103		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C5 PFHxA	105		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C4 PFHpA	110		50 - 200	06/16/24 11:15	06/17/24 16:25	1

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

Lab Sample ID: MBL 380-95178/20-A
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95178

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	108		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C9 PFNA	103		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C7 PFUnA	94		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C2 PFDoA	97		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C4 PFBA	101		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C5 PFPeA	108		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C3 PFBS	106		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C3 PFHxS	116		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C8 PFOS	102		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C2-4:2-FTS	138		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C2-6:2-FTS	130		50 - 200	06/16/24 11:15	06/17/24 16:25	1
13C2-8:2-FTS	113		50 - 200	06/16/24 11:15	06/17/24 16:25	1

Lab Sample ID: LCS 380-95178/22-A
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95178

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	115		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	122		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	113		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	120		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	127		ng/L		105	70 - 130
Perfluorodecanoic acid (PFDA)	120	123		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	120	122		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	119		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	117		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	120	122		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	120	121		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	126		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	120	123		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	129		ng/L		107	70 - 130
Perfluorobutanoic acid (PFBA)	120	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	120		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	125		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	124		ng/L		103	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	118		ng/L		98	70 - 130

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

Lab Sample ID: LCS 380-95178/22-A
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95178

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	120		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	124		ng/L		103	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	117		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	120	117		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	128		ng/L		106	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	118		ng/L		98	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*95*		*50 - 200*
13C6 PFDA	*103*		*50 - 200*
13C5 PFHxA	*98*		*50 - 200*
13C4 PFHpA	*107*		*50 - 200*
13C8 PFOA	*107*		*50 - 200*
13C9 PFNA	*103*		*50 - 200*
13C7 PFUnA	*96*		*50 - 200*
13C2 PFDoA	*98*		*50 - 200*
13C4 PFBA	*106*		*50 - 200*
13C5 PFPeA	*111*		*50 - 200*
13C3 PFBS	*105*		*50 - 200*
13C3 PFHxS	*114*		*50 - 200*
13C8 PFOS	*103*		*50 - 200*
13C2-4:2-FTS	*130*		*50 - 200*
13C2-6:2-FTS	*131*		*50 - 200*
13C2-8:2-FTS	*120*		*50 - 200*

Lab Sample ID: MRL 380-95178/21-A
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95178

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.00	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.02	J	ng/L		100	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.96	J	ng/L		97	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.26	J	ng/L		112	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.26	J	ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.12	J	ng/L		105	50 - 150

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

Lab Sample ID: MRL 380-95178/21-A
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95178

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluorohexanesulfonic acid (PFHxS)			2.01	2.13	J	ng/L		106	50 - 150		
Perfluorohexanoic acid (PFHxA)			2.01	2.05	J	ng/L		102	50 - 150		
Perfluorononanoic acid (PFNA)			2.01	2.12	J	ng/L		106	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			2.01	2.39	J	ng/L		119	50 - 150		
Perfluorooctanoic acid (PFOA)			2.01	1.98	J	ng/L		99	50 - 150		
Perfluoroundecanoic acid (PFUnA)			2.01	2.32	J	ng/L		115	50 - 150		
Perfluorobutanoic acid (PFBA)			2.01	2.04	J	ng/L		101	50 - 150		
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)			2.01	2.19	J	ng/L		109	50 - 150		
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)			2.01	2.46	J	ng/L		122	50 - 150		
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)			2.01	2.36	J	ng/L		117	50 - 150		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)			2.01	2.11	J	ng/L		105	50 - 150		
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)			2.01	2.02	J	ng/L		101	50 - 150		
Perfluoro-3-methoxypropanoic acid (PFMPA)			2.01	2.06	J	ng/L		102	50 - 150		
Perfluoro-4-methoxybutanoic acid (PFMBA)			2.01	2.00	J	ng/L		99	50 - 150		
Perfluoropentanoic acid (PFPeA)			2.01	2.14	J	ng/L		107	50 - 150		
Perfluoroheptanesulfonic acid (PFHpS)			2.01	2.20	J	ng/L		109	50 - 150		
Perfluoropentanesulfonic acid (PFPeS)			2.01	2.03	J	ng/L		101	50 - 150		

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*87*		*50 - 200*
13C6 PFDA	*104*		*50 - 200*
13C5 PFHxA	*103*		*50 - 200*
13C4 PFHpA	*111*		*50 - 200*
13C8 PFOA	*106*		*50 - 200*
13C9 PFNA	*104*		*50 - 200*
13C7 PFUnA	*94*		*50 - 200*
13C2 PFDoA	*93*		*50 - 200*
13C4 PFBA	*105*		*50 - 200*
13C5 PFPeA	*109*		*50 - 200*
13C3 PFBS	*105*		*50 - 200*
13C3 PFHxS	*117*		*50 - 200*
13C8 PFOS	*103*		*50 - 200*
13C2-4:2-FTS	*136*		*50 - 200*
13C2-6:2-FTS	*136*		*50 - 200*
13C2-8:2-FTS	*116*		*50 - 200*

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

Lab Sample ID: 380-99944-B-1-A MS
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 95178

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	58.8		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	60.3		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	53.8		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	58.5		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.1	70.0		ng/L		113	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.1	61.5		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	63.7		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	2.2		60.1	61.4		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	13		60.1	76.0		ng/L		104	70 - 130
Perfluorohexanoic acid (PFHxA)	4.6		60.1	68.3		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.1	62.3		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	5.1		60.1	69.4		ng/L		107	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.1	61.2		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	66.9		ng/L		111	70 - 130
Perfluorobutanoic acid (PFBA)	2.1		60.1	65.0		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	65.1		ng/L		108	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	64.3		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	63.1		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	64.8		ng/L		108	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.1	60.9		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	66.2		ng/L		110	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	58.0		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	5.3		60.1	65.4		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	65.0		ng/L		108	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	60.9		ng/L		99	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*80*		*50 - 200*
13C6 PFDA	*72*		*50 - 200*
13C5 PFHxA	*83*		*50 - 200*
13C4 PFHpA	*86*		*50 - 200*
13C8 PFOA	*77*		*50 - 200*
13C9 PFNA	*66*		*50 - 200*

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

Lab Sample ID: 380-99944-B-1-A MS
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 95178

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C7 PFUnA	75		50 - 200
13C2 PFDoA	77		50 - 200
13C4 PFBA	93		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	115		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	140		50 - 200
13C2-6:2-FTS	138		50 - 200
13C2-8:2-FTS	118		50 - 200

Lab Sample ID: 380-99944-C-1-A MSD
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 95178

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	61.2		ng/L		102	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	62.0		ng/L		103	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	57.5		ng/L		95	70 - 130	7	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	61.9		ng/L		103	70 - 130	6	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	71.3		ng/L		115	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	60.5		ng/L		100	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	65.4		ng/L		109	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	2.2		60.2	64.2		ng/L		103	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	13		60.2	74.9		ng/L		102	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	4.6		60.2	68.6		ng/L		106	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	63.4		ng/L		105	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	5.1		60.2	70.0		ng/L		108	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	61.8		ng/L		100	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	68.2		ng/L		113	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	2.1		60.2	66.6		ng/L		107	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	65.7		ng/L		109	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	66.6		ng/L		110	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	67.6		ng/L		112	70 - 130	7	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	62.0		ng/L		103	70 - 130	4	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	64.5		ng/L		107	70 - 130	6	30

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

Lab Sample ID: 380-99944-C-1-A MSD
Matrix: Water
Analysis Batch: 95338

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 95178

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	66.7		ng/L		111	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	60.4		ng/L		100	70 - 130	4	30
Perfluoropentanoic acid (PFPeA)	5.3		60.2	64.0		ng/L		97	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	65.8		ng/L		109	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	62.5		ng/L		102	70 - 130	3	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*86*		*50 - 200*
13C6 PFDA	*99*		*50 - 200*
13C5 PFHxA	*93*		*50 - 200*
13C4 PFHpA	*101*		*50 - 200*
13C8 PFOA	*101*		*50 - 200*
13C9 PFNA	*96*		*50 - 200*
13C7 PFUnA	*90*		*50 - 200*
13C2 PFDoA	*88*		*50 - 200*
13C4 PFBA	*99*		*50 - 200*
13C5 PFPeA	*119*		*50 - 200*
13C3 PFBS	*104*		*50 - 200*
13C3 PFHxS	*115*		*50 - 200*
13C8 PFOS	*102*		*50 - 200*
13C2-4:2-FTS	*141*		*50 - 200*
13C2-6:2-FTS	*131*		*50 - 200*
13C2-8:2-FTS	*116*		*50 - 200*

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

Lab Sample ID: MBL 380-95387/20-A
Matrix: Water
Analysis Batch: 95468

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95387

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1

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

Lab Sample ID: MBL 380-95387/20-A
Matrix: Water
Analysis Batch: 95468

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95387

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		06/17/24 15:24	06/18/24 12:45	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*111*		*70 - 130*	*06/17/24 15:24*	*06/18/24 12:45*	*1*
13C2 PFHxA	*114*		*70 - 130*	*06/17/24 15:24*	*06/18/24 12:45*	*1*
13C2 PFDA	*117*		*70 - 130*	*06/17/24 15:24*	*06/18/24 12:45*	*1*
13C3-GenX	*108*		*70 - 130*	*06/17/24 15:24*	*06/18/24 12:45*	*1*

Lab Sample ID: LCS 380-95387/22-A
Matrix: Water
Analysis Batch: 95468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95387

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			25.0	27.3		ng/L		109	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			25.0	27.7		ng/L		111	70 - 130		
Perfluoroundecanoic acid (PFUnA)			25.0	29.2		ng/L		117	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			25.0	26.5		ng/L		106	70 - 130		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			25.0	28.1		ng/L		112	70 - 130		
Perfluorohexanoic acid (PFHxA)			25.0	28.1		ng/L		112	70 - 130		
Perfluorododecanoic acid (PFDoA)			25.0	28.4		ng/L		113	70 - 130		
Perfluorooctanoic acid (PFOA)			25.0	28.8		ng/L		115	70 - 130		
Perfluorodecanoic acid (PFDA)			25.0	28.6		ng/L		114	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			25.0	29.6		ng/L		119	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			25.0	25.6		ng/L		102	70 - 130		
Perfluoroheptanoic acid (PFHpA)			25.0	30.8		ng/L		123	70 - 130		
Perfluorononanoic acid (PFNA)			25.0	29.3		ng/L		117	70 - 130		
Perfluorotetradecanoic acid (PFTA)			25.0	28.5		ng/L		114	70 - 130		
Perfluorotridecanoic acid (PFTrDA)			25.0	28.0		ng/L		112	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			25.0	29.4		ng/L		117	70 - 130		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			25.0	25.8		ng/L		103	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			25.0	28.8		ng/L		115	70 - 130		

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	113		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	121		70 - 130
13C3-GenX	112		70 - 130

Lab Sample ID: MRL 380-95387/21-A
Matrix: Water
Analysis Batch: 95468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95387

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.37	J	ng/L		118	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.50	J	ng/L		125	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.51	J	ng/L		125	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.59	J	ng/L		129	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.47	J	ng/L		123	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.51	J	ng/L		125	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.63	J	ng/L		131	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.55	J	ng/L		127	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.48	J	ng/L		124	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.21	J	ng/L		111	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.56	J	ng/L		128	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.63	J	ng/L		131	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.38	J	ng/L		119	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.29	J	ng/L		114	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.11	J	ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.51	J	ng/L		125	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	116		70 - 130
13C2 PFHxA	114		70 - 130
13C2 PFDA	122		70 - 130
13C3-GenX	111		70 - 130

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

Lab Sample ID: 380-99960-B-6-A LMS
Matrix: Water
Analysis Batch: 95468

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 95387

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.25		ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	10		2.01	12.9	4	ng/L		122	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.44		ng/L		121	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.58		ng/L		128	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.60		ng/L		129	50 - 150
Perfluorohexanoic acid (PFHxA)	7.7		2.01	9.90		ng/L		109	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.20		ng/L		109	50 - 150
Perfluorooctanoic acid (PFOA)	14		2.01	16.4	4	ng/L		140	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.81		ng/L		119	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.01	3.95		ng/L		129	50 - 150
Perfluorobutanesulfonic acid (PFBS)	3.3		2.01	5.70		ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	3.6		2.01	6.11		ng/L		125	50 - 150
Perfluorononanoic acid (PFNA)	2.7		2.01	5.29		ng/L		127	50 - 150
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.03		ng/L		101	50 - 150
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.07		ng/L		103	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.36		ng/L		117	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.08		ng/L		104	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.46		ng/L		122	50 - 150

Surrogate	*LMS %Recovery*	*LMS Qualifier*	*Limits*
d5-NEtFOSAA	*106*		*70 - 130*
13C2 PFHxA	*111*		*70 - 130*
13C2 PFDA	*110*		*70 - 130*
13C3-GenX	*101*		*70 - 130*

Lab Sample ID: 380-99960-C-6-A LMSD
Matrix: Water
Analysis Batch: 95468

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 95387

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.39		ng/L		119	50 - 150	6	50
Perfluorooctanesulfonic acid (PFOS)	10		2.01	12.2	4	ng/L		88	50 - 150	5	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.46		ng/L		122	50 - 150	1	50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.45		ng/L		122	50 - 150	5	50

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

Lab Sample ID: 380-99960-C-6-A LMSD
Matrix: Water
Analysis Batch: 95468

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 95387

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.40		ng/L		119	50 - 150	8	50
Perfluorohexanoic acid (PFHxA)	7.7		2.01	9.75		ng/L		101	50 - 150	2	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.18		ng/L		109	50 - 150	1	50
Perfluorooctanoic acid (PFOA)	14		2.01	15.5	4	ng/L		95	50 - 150	6	50
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.99		ng/L		128	50 - 150	6	50
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.01	3.70		ng/L		117	50 - 150	6	50
Perfluorobutanesulfonic acid (PFBS)	3.3		2.01	5.68		ng/L		118	50 - 150	0	50
Perfluoroheptanoic acid (PFHpA)	3.6		2.01	6.21		ng/L		130	50 - 150	2	50
Perfluorononanoic acid (PFNA)	2.7		2.01	5.19		ng/L		123	50 - 150	2	50
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	1.85	J	ng/L		92	50 - 150	9	50
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.03		ng/L		101	50 - 150	2	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.43		ng/L		121	50 - 150	3	50
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.00		ng/L		99	50 - 150	4	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.50		ng/L		124	50 - 150	2	50

Surrogate	*LMSD %Recovery*	*LMSD Qualifier*	*Limits*
d5-NEtFOSAA	*105*		*70 - 130*
13C2 PFHxA	*115*		*70 - 130*
13C2 PFDA	*120*		*70 - 130*
13C3-GenX	*103*		*70 - 130*

GC/MS Semi VOA

Prep Batch: 95314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-99971-1	MOANALUA WELLS	Total/NA	Water	525.2	
380-99971-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	525.2	
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	525.2	
380-99971-4	HALAWA WELLS UNITS 1 & 2	Total/NA	Water	525.2	
MB 380-95314/20-A	Method Blank	Total/NA	Water	525.2	
LCS 380-95314/23-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-95314/21-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-95314/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-99951-E-2-A MS	Matrix Spike	Total/NA	Water	525.2	
380-99960-E-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 95490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-99971-1	MOANALUA WELLS	Total/NA	Water	525.2	95314
380-99971-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	525.2	95314
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	525.2	95314
380-99971-4	HALAWA WELLS UNITS 1 & 2	Total/NA	Water	525.2	95314
MB 380-95314/20-A	Method Blank	Total/NA	Water	525.2	95314
LCS 380-95314/23-A	Lab Control Sample	Total/NA	Water	525.2	95314
MRL 380-95314/21-A	Lab Control Sample	Total/NA	Water	525.2	95314
MRL 380-95314/22-A	Lab Control Sample	Total/NA	Water	525.2	95314
380-99951-E-2-A MS	Matrix Spike	Total/NA	Water	525.2	95314
380-99960-E-1-A DU	Duplicate	Total/NA	Water	525.2	95314

LCMS

Prep Batch: 95178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-99971-1	MOANALUA WELLS	Total/NA	Water	533	
380-99971-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	533	
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	533	
380-99971-4	HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	
380-99971-5	FB MOANALUA WELLS	Total/NA	Water	533	
380-99971-6	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	533	
380-99971-7	FB AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	533	
380-99971-8	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	
MBL 380-95178/20-A	Method Blank	Total/NA	Water	533	
LCS 380-95178/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-95178/21-A	Lab Control Sample	Total/NA	Water	533	
380-99944-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-99944-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 95338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-99971-1	MOANALUA WELLS	Total/NA	Water	533	95178
380-99971-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	533	95178
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	533	95178
380-99971-4	HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	95178
380-99971-5	FB MOANALUA WELLS	Total/NA	Water	533	95178
380-99971-6	FB AIEA GULCH WELLS PUMP2	Total/NA	Water	533	95178
380-99971-7	FB AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	533	95178

LCMS (Continued)

Analysis Batch: 95338 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-99971-8	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	95178
MBL 380-95178/20-A	Method Blank	Total/NA	Water	533	95178
LCS 380-95178/22-A	Lab Control Sample	Total/NA	Water	533	95178
MRL 380-95178/21-A	Lab Control Sample	Total/NA	Water	533	95178
380-99944-B-1-A MS	Matrix Spike	Total/NA	Water	533	95178
380-99944-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	95178

Prep Batch: 95387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-99971-1	MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-99971-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1 DW	
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	537.1 DW	
MBL 380-95387/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-95387/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-95387/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-99960-B-6-A LMS	Matrix Spike	Total/NA	Water	537.1 DW	
380-99960-C-6-A LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 95468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-99971-1	MOANALUA WELLS	Total/NA	Water	537.1	95387
380-99971-2	AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1	95387
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	537.1	95387
MBL 380-95387/20-A	Method Blank	Total/NA	Water	537.1	95387
LCS 380-95387/22-A	Lab Control Sample	Total/NA	Water	537.1	95387
MRL 380-95387/21-A	Lab Control Sample	Total/NA	Water	537.1	95387
380-99960-B-6-A LMS	Matrix Spike	Total/NA	Water	537.1	95387
380-99960-C-6-A LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1	95387

Lab Chronicle

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Lab Sample ID: 380-99971-1
Date Collected: 06/12/24 10:10
Matrix: Water
Date Received: 06/14/24 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			95314	OTM3	EA POM	06/17/24 12:30
Total/NA	Analysis	525.2		1	95490	X8AA	EA POM	06/18/24 16:43
Total/NA	Prep	533			95178	N8NE	EA POM	06/16/24 11:15
Total/NA	Analysis	533		1	95338	SZ9R	EA POM	06/17/24 18:20
Total/NA	Prep	537.1 DW			95387	G9MN	EA POM	06/17/24 15:24
Total/NA	Analysis	537.1		1	95468	SZ9R	EA POM	06/18/24 14:43

Client Sample ID: AIEA GULCH WELLS PUMP2
Lab Sample ID: 380-99971-2
Date Collected: 06/12/24 11:00
Matrix: Water
Date Received: 06/14/24 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			95314	OTM3	EA POM	06/17/24 12:30
Total/NA	Analysis	525.2		1	95490	X8AA	EA POM	06/18/24 17:03
Total/NA	Prep	533			95178	N8NE	EA POM	06/16/24 11:15
Total/NA	Analysis	533		1	95338	SZ9R	EA POM	06/17/24 18:29
Total/NA	Prep	537.1 DW			95387	G9MN	EA POM	06/17/24 15:24
Total/NA	Analysis	537.1		1	95468	SZ9R	EA POM	06/18/24 14:53

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
Lab Sample ID: 380-99971-3
Date Collected: 06/12/24 11:30
Matrix: Water
Date Received: 06/14/24 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			95314	OTM3	EA POM	06/17/24 12:30
Total/NA	Analysis	525.2		1	95490	X8AA	EA POM	06/18/24 17:23
Total/NA	Prep	533			95178	N8NE	EA POM	06/16/24 11:15
Total/NA	Analysis	533		1	95338	SZ9R	EA POM	06/17/24 18:39
Total/NA	Prep	537.1 DW			95387	G9MN	EA POM	06/17/24 15:24
Total/NA	Analysis	537.1		1	95468	SZ9R	EA POM	06/18/24 15:02

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Lab Sample ID: 380-99971-4
Date Collected: 06/12/24 10:40
Matrix: Water
Date Received: 06/14/24 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			95314	OTM3	EA POM	06/17/24 12:30
Total/NA	Analysis	525.2		1	95490	X8AA	EA POM	06/18/24 17:43
Total/NA	Prep	533			95178	N8NE	EA POM	06/16/24 11:15
Total/NA	Analysis	533		1	95338	SZ9R	EA POM	06/17/24 18:58

Lab Chronicle

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB MOANALUA WELLS
Lab Sample ID: 380-99971-5
Date Collected: 06/12/24 10:10
Matrix: Water
Date Received: 06/14/24 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			95178	N8NE	EA POM	06/16/24 11:15
Total/NA	Analysis	533		1	95338	SZ9R	EA POM	06/17/24 19:08

Client Sample ID: FB AIEA GULCH WELLS PUMP2
Lab Sample ID: 380-99971-6
Date Collected: 06/12/24 11:00
Matrix: Water
Date Received: 06/14/24 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			95178	N8NE	EA POM	06/16/24 11:15
Total/NA	Analysis	533		1	95338	SZ9R	EA POM	06/17/24 19:17

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260)
Lab Sample ID: 380-99971-7
Date Collected: 06/12/24 11:30
Matrix: Water
Date Received: 06/14/24 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			95178	N8NE	EA POM	06/16/24 11:15
Total/NA	Analysis	533		1	95338	SZ9R	EA POM	06/17/24 19:27

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2
Lab Sample ID: 380-99971-8
Date Collected: 06/12/24 10:40
Matrix: Water
Date Received: 06/14/24 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			95178	N8NE	EA POM	06/16/24 11:15
Total/NA	Analysis	533		1	95338	SZ9R	EA POM	06/17/24 19:36

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

Accreditation/Certification Summary

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

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	01-31-25

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	Water	1-Methylnaphthalene
525.2	525.2	Water	2,4'-DDD
525.2	525.2	Water	2,4'-DDE
525.2	525.2	Water	2,4'-DDT
525.2	525.2	Water	2,4-Dinitrotoluene
525.2	525.2	Water	2,6-Dinitrotoluene
525.2	525.2	Water	2-Methylnaphthalene
525.2	525.2	Water	4,4'-DDD
525.2	525.2	Water	4,4'-DDE
525.2	525.2	Water	4,4'-DDT
525.2	525.2	Water	Acetochlor
525.2	525.2	Water	alpha-BHC
525.2	525.2	Water	alpha-Chlordane
525.2	525.2	Water	beta-BHC
525.2	525.2	Water	Chlorobenzilate
525.2	525.2	Water	Chloroneb
525.2	525.2	Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Water	Chlorpyrifos
525.2	525.2	Water	delta-BHC
525.2	525.2	Water	Diclorvos (DDVP)
525.2	525.2	Water	Endosulfan I (Alpha)
525.2	525.2	Water	Endosulfan II (Beta)
525.2	525.2	Water	Endosulfan sulfate
525.2	525.2	Water	Endrin aldehyde
525.2	525.2	Water	EPTC
525.2	525.2	Water	gamma-Chlordane
525.2	525.2	Water	Isophorone
525.2	525.2	Water	Malathion
525.2	525.2	Water	Parathion
525.2	525.2	Water	Pendimethalin (Penoxaline)
525.2	525.2	Water	Terbacil
525.2	525.2	Water	Terbuthylazine
525.2	525.2	Water	Total Permethrin (mixed isomers)
525.2	525.2	Water	trans-Nonachlor

Method Summary

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
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

Laboratory References:

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

Sample Summary

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

Job ID: 380-99971-1
SDG: 525.2, 533, 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-99971-1	MOANALUA WELLS	Water	06/12/24 10:10	06/14/24 09:39
380-99971-2	AIEA GULCH WELLS PUMP2	Water	06/12/24 11:00	06/14/24 09:39
380-99971-3	AIEA WELLS PUMPS 1&2 (260)	Water	06/12/24 11:30	06/14/24 09:39
380-99971-4	HALAWA WELLS UNITS 1 & 2	Water	06/12/24 10:40	06/14/24 09:39
380-99971-5	FB MOANALUA WELLS	Water	06/12/24 10:10	06/14/24 09:39
380-99971-6	FB AIEA GULCH WELLS PUMP2	Water	06/12/24 11:00	06/14/24 09:39
380-99971-7	FB AIEA WELLS PUMPS 1&2 (260)	Water	06/12/24 11:30	06/14/24 09:39
380-99971-8	FB HALAWA WELLS UNITS 1 & 2	Water	06/12/24 10:40	06/14/24 09:39

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

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Preetha Anand	Lab PM: Arada Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757 2
Client Contact: Dr Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested			
City: Honolulu	TAT Requested (days):			
State, Zip: HI 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I - Ice, J - DI Water, K EDTA, L - EDA, M Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18	625.2_PREC (MOD) 525plus PLUS TICs	537 1_DW_PREC 537 1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	A	Q	QA	Y	I		
MOANALUA WELLS	12-Jun-2024	1010	G	Water							3	3		chlorinated
AIEA GULCH WELLS PUMP2	12-Jun-2024	1100	G	Water							3	3		chlorinated
AIEA WELLS PUMPS 1&2 (260)	12-Jun-2024	1130	G	Water							3	3		(1) 7768 5643 9320
HALAWA WELLS UNITS 1&2	12-Jun-2024	1040	G	Water							3	3		(751A) 3.3°-0.1°=3.2°
FB MOANALUA WELLS	12-Jun-2024	1010	G	Water							1	1		(1) FB bottle swapped with a regular sample bottle
FB AIEA GULCH WELLS PUMP2	12-Jun-2024	1100	G	Water							1	1		(2) 7768 5643 9330
FB AIEA WELLS PUMPS 1&2 (260)	12-Jun-2024	1130	G	Water							1	1		(751A) 3.5°-0.1°=3.4°
FB HALAWA WELLS UNITS 1&2	12-Jun-2024	1040	G	Water							1	1		(3) 7768 5643 9341
														(751A) 3.6°-0.1°=3.5°
														(4) 7768 5643 9352

380-99971 COC

(4)(751A) 3.0°-0.1°=2.9°

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III, IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FED EX 4 COOLERS ↑

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
PA	6/13/24 1200	HBWS	G. REITNER	06/14/2024 09:39	EEAP

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: (751A) -0.1° CORRECTION GEL-FROZEN ↑

Ver: 01/16/2019

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6/20/2024

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-99971-1
SDG Number: 525.2, 533, 537.1

Login Number: 99971
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	