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 1/18/2024 5:58:39 PM

JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-73688-2

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

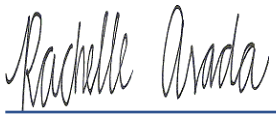
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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
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Table of Contents

Definitions/Glossary

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

Job ID: 380-73688-2

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

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: 380-73688-2 — Eurofins Eaton Analytical Pomona

Job Narrative
380-73688-2

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 12/6/2023 10:30 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, 1.9°C and 2.8°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.

GC Semi VOA
Method 8015B_DRO_LL_CS: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-390859. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method 8015B_DRO_LL_CS

Method 8015B_DRO_LL_CS: The method reporting limit check (MRL) for preparation batch 570-390859 and analytical batch 570-397207 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

Job ID: 380-73688-2

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-73688-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2
PWSID Number: HI0000331

Lab Sample ID: 380-73688-2

No Detections.

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

Lab Sample ID: 380-73688-3

No Detections.

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

Lab Sample ID: 380-73688-4

No Detections.

Client Sample ID: TB MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-73688-5

No Detections.

Client Sample ID: TB AIEA GULCH WELLS PUMP 2
PWSID Number: HI0000331

Lab Sample ID: 380-73688-6

No Detections.

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

Lab Sample ID: 380-73688-7

No Detections.

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

Lab Sample ID: 380-73688-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample ID: MOANALUA WELLS

Date Collected: 12/04/23 10:04
Date Received: 12/06/23 10:30

Lab Sample ID: 380-73688-1

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			12/13/23 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*38 - 134*		*12/13/23 14:54*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25		ug/L		12/08/23 14:02	12/29/23 15:52	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		12/08/23 14:02	12/29/23 15:52	1
C8-C18	<25		25		ug/L		12/08/23 14:02	12/29/23 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*103*		*60 - 130*	*12/08/23 14:02*	*12/29/23 15:52*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10		mg/L			12/14/23 00:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Hexafluoro-2-propanol (Surr)	*97*		*54 - 120*		*12/14/23 00:11*	*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		12/11/23 00:00	12/25/23 11:29	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Acenaphthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Acenaphthylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Biphenyl	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Chrysene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Dibenzothiophene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		12/11/23 00:00	12/25/23 11:29	1
Fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Fluorene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Naphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Phenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1
Pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 11:29	1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-73688-1
Date Collected: 12/04/23 10:04
Matrix: Drinking Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	62		27 - 133	12/11/23 00:00	12/25/23 11:29	1
(d10-Phenanthrene)	64		43 - 129	12/11/23 00:00	12/25/23 11:29	1
(d12-Chrysene)	80		52 - 144	12/11/23 00:00	12/25/23 11:29	1
(d12-Perylene)	82		36 - 161	12/11/23 00:00	12/25/23 11:29	1
(d8-Naphthalene)	65		25 - 125	12/11/23 00:00	12/25/23 11:29	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-73688-2
Date Collected: 12/04/23 10:53
Matrix: Drinking Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10		ug/L			12/13/23 15:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		38 - 134		12/13/23 15:20	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25		ug/L		12/08/23 14:02	12/29/23 16:13	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		12/08/23 14:02	12/29/23 16:13	1
C8-C18	<25		25		ug/L		12/08/23 14:02	12/29/23 16:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	101		60 - 130	12/08/23 14:02	12/29/23 16:13	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10		mg/L			12/14/23 00:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	71	p	54 - 120		12/14/23 00:33	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		12/11/23 00:00	12/25/23 09:44	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Acenaphthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Acenaphthylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Biphenyl	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Chrysene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-73688-2
Date Collected: 12/04/23 10:53
Matrix: Drinking Water
Date Received: 12/06/23 10:30
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
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Dibenzothiophene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		12/11/23 00:00	12/25/23 09:44	1
Fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Fluorene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Naphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Phenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1
Pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 09:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*63*		*27 - 133*	*12/11/23 00:00*	*12/25/23 09:44*	*1*
(d10-Phenanthrene)	*67*		*43 - 129*	*12/11/23 00:00*	*12/25/23 09:44*	*1*
(d12-Chrysene)	*100*		*52 - 144*	*12/11/23 00:00*	*12/25/23 09:44*	*1*
(d12-Perylene)	*93*		*36 - 161*	*12/11/23 00:00*	*12/25/23 09:44*	*1*
(d8-Naphthalene)	*75*		*25 - 125*	*12/11/23 00:00*	*12/25/23 09:44*	*1*

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

Lab Sample ID: 380-73688-3
Date Collected: 12/04/23 11:20
Matrix: Drinking Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10		ug/L			12/13/23 15:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*38 - 134*		*12/13/23 15:46*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25		ug/L		12/08/23 14:02	12/29/23 16:34	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		12/08/23 14:02	12/29/23 16:34	1
C8-C18	<25		25		ug/L		12/08/23 14:02	12/29/23 16:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*102*		*60 - 130*	*12/08/23 14:02*	*12/29/23 16:34*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10		mg/L			12/14/23 00:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Hexafluoro-2-propanol (Surr)	*101*		*54 - 120*		*12/14/23 00:55*	*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		12/11/23 00:00	12/25/23 13:13	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1

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

Lab Sample ID: 380-73688-3
Date Collected: 12/04/23 11:20
Matrix: Drinking Water
Date Received: 12/06/23 10:30
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
Acenaphthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Acenaphthylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Biphenyl	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Chrysene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Dibenzothiophene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		12/11/23 00:00	12/25/23 13:13	1
Fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Fluorene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Naphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Phenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1
Pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 13:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*87*		*27 - 133*	*12/11/23 00:00*	*12/25/23 13:13*	*1*
(d10-Phenanthrene)	*95*		*43 - 129*	*12/11/23 00:00*	*12/25/23 13:13*	*1*
(d12-Chrysene)	*96*		*52 - 144*	*12/11/23 00:00*	*12/25/23 13:13*	*1*
(d12-Perylene)	*97*		*36 - 161*	*12/11/23 00:00*	*12/25/23 13:13*	*1*
(d8-Naphthalene)	*91*		*25 - 125*	*12/11/23 00:00*	*12/25/23 13:13*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-73688-4
Date Collected: 12/04/23 10:29
Matrix: Drinking Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10		ug/L			12/13/23 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*38 - 134*		*12/13/23 16:12*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25		ug/L		12/08/23 14:02	12/29/23 16:55	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		12/08/23 14:02	12/29/23 16:55	1
C8-C18	<25		25		ug/L		12/08/23 14:02	12/29/23 16:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*96*		*60 - 130*	*12/08/23 14:02*	*12/29/23 16:55*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-73688-4
Date Collected: 12/04/23 10:29
Matrix: Drinking Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10		mg/L			12/14/23 01:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Hexafluoro-2-propanol (Surr)	*93*		*54 - 120*		*12/14/23 01:17*	*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		12/11/23 00:00	12/25/23 14:58	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Acenaphthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Acenaphthylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Biphenyl	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Chrysene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Dibenzothiophene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		12/11/23 00:00	12/25/23 14:58	1
Fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Fluorene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Naphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Phenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1
Pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*94*		*27 - 133*	*12/11/23 00:00*	*12/25/23 14:58*	*1*
(d10-Phenanthrene)	*93*		*43 - 129*	*12/11/23 00:00*	*12/25/23 14:58*	*1*
(d12-Chrysene)	*84*		*52 - 144*	*12/11/23 00:00*	*12/25/23 14:58*	*1*
(d12-Perylene)	*83*		*36 - 161*	*12/11/23 00:00*	*12/25/23 14:58*	*1*
(d8-Naphthalene)	*90*		*25 - 125*	*12/11/23 00:00*	*12/25/23 14:58*	*1*

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-73688-5
Date Collected: 12/04/23 10:04
Matrix: Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10		ug/L			12/13/23 13:09	1

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-73688-5
Date Collected: 12/04/23 10:04
Matrix: Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*38 - 134*		*12/13/23 13:09*	*1*

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-73688-6
Date Collected: 12/04/23 10:53
Matrix: Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10		ug/L			12/13/23 13:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*38 - 134*		*12/13/23 13:35*	*1*

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

Lab Sample ID: 380-73688-7
Date Collected: 12/04/23 11:20
Matrix: Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10		ug/L			12/13/23 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*38 - 134*		*12/13/23 14:01*	*1*

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

Lab Sample ID: 380-73688-8
Date Collected: 12/04/23 10:29
Matrix: Water
Date Received: 12/06/23 10:30
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10		ug/L			12/13/23 14:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*38 - 134*		*12/13/23 14:28*	*1*

Surrogate Summary

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

Job ID: 380-73688-2

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)
380-73688-1	MOANALUA WELLS	98
380-73688-2	AIEA GULCH WELLS PUMP 2	95
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	94
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	74
380-73688-4 MS	HALAWA WELLS UNITS 1 & 2 P1	99
380-73688-4 MSD	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**

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) BFB1 (38-134)
380-73688-5	TB MOANALUA WELLS	90
380-73688-6	TB AIEA GULCH WELLS PUMP 2	104
380-73688-7	TB AIEA WELLS PUMPS 1&2 (260) P2	88
380-73688-8	TB HALAWA WELLS UNITS 1 & 2 P1	101
LCS 570-392181/4	Lab Control Sample	107
LCSD 570-392181/5	Lab Control Sample Dup	113
MB 570-392181/6	Method Blank	91
MRL 570-392181/3	Lab Control Sample	85

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)
380-73688-1	MOANALUA WELLS	103
380-73688-2	AIEA GULCH WELLS PUMP 2	101
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	102
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	96

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Surrogate Summary

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

Job ID: 380-73688-2

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

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) OTCSN1 (60-130)
LCS 570-390859/2-A	Lab Control Sample	97
LCSD 570-390859/3-A	Lab Control Sample Dup	104
MB 570-390859/1-A	Method Blank	102
MRL 570-390859/4-A	Lab Control Sample	88

Surrogate Legend

OTCSN = n-Octacosane (Surr)

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

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) HF2PP1 (54-120)
380-73688-1	MOANALUA WELLS	97
380-73688-2	AIEA GULCH WELLS PUMP 2	71 p
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	101
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	93

Surrogate Legend

HF2PP = Hexafluoro-2-propanol (Surr)

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

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) HF2PP1 (54-120)
570-163648-A-1 MS	Matrix Spike	110
570-163648-A-1 MSD	Matrix Spike Duplicate	98
LCS 570-392472/4	Lab Control Sample	107
LCSD 570-392472/5	Lab Control Sample Dup	110
MB 570-392472/3	Method Blank	107
MRL 570-392472/6	Lab Control Sample	70

Surrogate Legend

HF2PP = Hexafluoro-2-propanol (Surr)

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

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) Acenapht (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
113366-B1	Method Blank	93	102	76	105	104
113366-BS1	Lab Control Sample	86	99	102	91	100
113366-BS2	Lab Control Sample Dup	85	101	91	92	89

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)
CRY = (d12-Chrysene)

Surrogate Summary

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

Job ID: 380-73688-2

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)			
380-73688-1	MOANALUA WELLS	62	64	80	65	82			
380-73688-2	AIEA GULCH WELLS PUMP 2	63	67	100	75	93			
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	87	95	96	91	97			
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	94	93	84	90	83			

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 570-392181/6
Matrix: Water
Analysis Batch: 392181

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10		ug/L			12/13/23 12:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*38 - 134*		*12/13/23 12:28*	*1*

Lab Sample ID: LCS 570-392181/4
Matrix: Water
Analysis Batch: 392181

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			389	419		ug/L		108	78 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*38 - 134*

Lab Sample ID: LCSD 570-392181/5
Matrix: Water
Analysis Batch: 392181

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			389	422		ug/L		109	78 - 120	1	10

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

Lab Sample ID: MRL 570-392181/3
Matrix: Water
Analysis Batch: 392181

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	12.6		ug/L		126	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*85*		*38 - 134*

Lab Sample ID: 380-73688-4 MS
Matrix: Drinking Water
Analysis Batch: 392181

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		389	413		ug/L		106	68 - 122		

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

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

Lab Sample ID: 380-73688-4 MSD
Matrix: Drinking Water
Analysis Batch: 392181

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		389	423		ug/L		109	68 - 122	2	18

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*38 - 134*

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

Lab Sample ID: MB 570-390859/1-A
Matrix: Water
Analysis Batch: 397207

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 390859

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25		ug/L		12/08/23 14:02	12/29/23 14:50	1
Motor Oil Range Organics [C24-C36]	<25		25		ug/L		12/08/23 14:02	12/29/23 14:50	1
C8-C18	<25		25		ug/L		12/08/23 14:02	12/29/23 14:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*102*		*60 - 130*	*12/08/23 14:02*	*12/29/23 14:50*	*1*

Lab Sample ID: LCS 570-390859/2-A
Matrix: Water
Analysis Batch: 397207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 390859

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			1600	1280		ug/L		80	56 - 127		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*97*		*60 - 130*

Lab Sample ID: LCSD 570-390859/3-A
Matrix: Water
Analysis Batch: 397207

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 390859

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			1600	1460		ug/L		91	56 - 127	13	23

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

Lab Sample ID: MRL 570-390859/4-A
Matrix: Water
Analysis Batch: 397207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 390859

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			0.0200	0.0340	^3+	mg/L		170	50 - 150		

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

Lab Sample ID: MRL 570-390859/4-A
Matrix: Water
Analysis Batch: 397207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 390859

Surrogate	MRL %Recovery	MRL Qualifier	Limits
n-Octacosane (Surr)	88		60 - 130

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

Lab Sample ID: MB 570-392472/3
Matrix: Water
Analysis Batch: 392472

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10		mg/L			12/13/23 21:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	107		54 - 120		12/13/23 21:17	1

Lab Sample ID: LCS 570-392472/4
Matrix: Water
Analysis Batch: 392472

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ethanol			2.00	2.37		mg/L		118	78 - 131		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Hexafluoro-2-propanol (Surr)	107		54 - 120

Lab Sample ID: LCSD 570-392472/5
Matrix: Water
Analysis Batch: 392472

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
Ethanol			2.00	2.15		mg/L		107	78 - 131	10	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Hexafluoro-2-propanol (Surr)	110		54 - 120

Lab Sample ID: MRL 570-392472/6
Matrix: Water
Analysis Batch: 392472

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Ethanol			0.100	0.113		mg/L		113	50 - 150		

Surrogate	MRL %Recovery	MRL Qualifier	Limits
Hexafluoro-2-propanol (Surr)	70		54 - 120

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

Lab Sample ID: 570-163648-A-1 MS
Matrix: Water
Analysis Batch: 392472

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Ethanol	<0.10		2.00	2.30		mg/L		115	20 - 173		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Hexafluoro-2-propanol (Surr)	*110*		*54 - 120*

Lab Sample ID: 570-163648-A-1 MSD
Matrix: Water
Analysis Batch: 392472

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethanol	<0.10		2.00	2.17		mg/L		109	20 - 173	6	21

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Hexafluoro-2-propanol (Surr)	*98*		*54 - 120*

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

Lab Sample ID: 113366-B1
Matrix: BlankMatrix
Analysis Batch: O-44036

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-44036_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Acenaphthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Acenaphthylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Biphenyl	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Chrysene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Dibenzothiophene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		12/11/23 00:00	12/25/23 04:31	1
Fluoranthene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Fluorene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Naphthalene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Perylene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1
Phenanthrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1

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

Lab Sample ID: 113366-B1
Matrix: BlankMatrix
Analysis Batch: O-44036

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-44036_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0.005	0.001	µg/L		12/11/23 00:00	12/25/23 04:31	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*93*		*27 - 133*	*12/11/23 00:00*	*12/25/23 04:31*	*1*
(d10-Phenanthrene)	*102*		*43 - 129*	*12/11/23 00:00*	*12/25/23 04:31*	*1*
(d12-Chrysene)	*76*		*52 - 144*	*12/11/23 00:00*	*12/25/23 04:31*	*1*
(d12-Perylene)	*104*		*36 - 161*	*12/11/23 00:00*	*12/25/23 04:31*	*1*
(d8-Naphthalene)	*105*		*25 - 125*	*12/11/23 00:00*	*12/25/23 04:31*	*1*

Lab Sample ID: 113366-BS1
Matrix: BlankMatrix
Analysis Batch: O-44036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-44036_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.423		µg/L		85	31 - 128
1-Methylphenanthrene	0.5	0.4		µg/L		80	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.485		µg/L		97	55 - 122
2,6-Dimethylnaphthalene	0.5	0.446		µg/L		89	48 - 120
2-Methylnaphthalene	0.5	0.423		µg/L		85	47 - 130
Acenaphthene	0.5	0.418		µg/L		84	53 - 131
Acenaphthylene	0.5	0.403		µg/L		81	43 - 140
Anthracene	0.5	0.504		µg/L		101	58 - 135
Benz[a]anthracene	0.5	0.458		µg/L		92	55 - 145
Benzo[a]pyrene	0.5	0.46		µg/L		92	51 - 143
Benzo[b]fluoranthene	0.5	0.419		µg/L		84	46 - 165
Benzo[e]pyrene	0.5	0.438		µg/L		88	42 - 152
Benzo[g,h,i]perylene	0.5	0.446		µg/L		89	63 - 133
Benzo[k]fluoranthene	0.5	0.462		µg/L		92	56 - 145
Biphenyl	0.5	0.453		µg/L		91	56 - 119
Chrysene	0.5	0.491		µg/L		98	56 - 141
Dibenz[a,h]anthracene	0.5	0.454		µg/L		91	55 - 150
Dibenzo[a,l]pyrene	0.5	0.457		µg/L		91	50 - 150
Dibenzothiophene	0.5	0.45		µg/L		90	46 - 126
Disalicylidenepropanediamine	50	69.2		µg/L		138	50 - 150
Fluoranthene	0.5	0.454		µg/L		91	60 - 146
Fluorene	0.5	0.454		µg/L		91	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.488		µg/L		98	50 - 151
Naphthalene	0.5	0.471		µg/L		94	41 - 126
Perylene	0.5	0.398		µg/L		80	48 - 141
Phenanthrene	0.5	0.449		µg/L		90	67 - 127
Pyrene	0.5	0.454		µg/L		91	54 - 156

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*86*		*27 - 133*
(d10-Phenanthrene)	*99*		*43 - 129*
(d12-Chrysene)	*102*		*52 - 144*
(d12-Perylene)	*100*		*36 - 161*
(d8-Naphthalene)	*91*		*25 - 125*

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

Lab Sample ID: 113366-BS2
Matrix: BlankMatrix
Analysis Batch: O-44036

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-44036_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.435		µg/L		87	31 - 128	2	30
1-Methylphenanthrene			0.5	0.461		µg/L		92	66 - 127	14	30
2,3,5-Trimethylnaphthalene			0.5	0.473		µg/L		95	55 - 122	2	30
2,6-Dimethylnaphthalene			0.5	0.456		µg/L		91	48 - 120	2	30
2-Methylnaphthalene			0.5	0.421		µg/L		84	47 - 130	1	30
Acenaphthene			0.5	0.445		µg/L		89	53 - 131	6	30
Acenaphthylene			0.5	0.413		µg/L		83	43 - 140	2	30
Anthracene			0.5	0.497		µg/L		99	58 - 135	2	30
Benz[a]anthracene			0.5	0.409		µg/L		82	55 - 145	11	30
Benzo[a]pyrene			0.5	0.459		µg/L		92	51 - 143	0	30
Benzo[b]fluoranthene			0.5	0.421		µg/L		84	46 - 165	0	30
Benzo[e]pyrene			0.5	0.402		µg/L		80	42 - 152	10	30
Benzo[g,h,i]perylene			0.5	0.475		µg/L		95	63 - 133	7	30
Benzo[k]fluoranthene			0.5	0.462		µg/L		92	56 - 145	0	30
Biphenyl			0.5	0.439		µg/L		88	56 - 119	3	30
Chrysene			0.5	0.448		µg/L		90	56 - 141	9	30
Dibenz[a,h]anthracene			0.5	0.476		µg/L		95	55 - 150	4	30
Dibenzo[a,l]pyrene			0.5	0.497		µg/L		99	50 - 150	8	30
Dibenzothiophene			0.5	0.466		µg/L		93	46 - 126	3	30
Disalicylidenepropanediamine			50	75.2		µg/L		150	50 - 150	8	30
Fluoranthene			0.5	0.48		µg/L		96	60 - 146	5	30
Fluorene			0.5	0.477		µg/L		95	58 - 131	4	30
Indeno[1,2,3-cd]pyrene			0.5	0.5		µg/L		100	50 - 151	2	30
Naphthalene			0.5	0.447		µg/L		89	41 - 126	5	30
Perylene			0.5	0.404		µg/L		81	48 - 141	1	30
Phenanthrene			0.5	0.453		µg/L		91	67 - 127	1	30
Pyrene			0.5	0.461		µg/L		92	54 - 156	1	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*85*		*27 - 133*
(d10-Phenanthrene)	*101*		*43 - 129*
(d12-Chrysene)	*91*		*52 - 144*
(d12-Perylene)	*89*		*36 - 161*
(d8-Naphthalene)	*92*		*25 - 125*

GC VOA

Analysis Batch: 392181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-73688-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	
380-73688-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B GRO LL	
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B GRO LL	
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	
380-73688-5	TB MOANALUA WELLS	Total/NA	Water	8015B GRO LL	
380-73688-6	TB AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015B GRO LL	
380-73688-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	8015B GRO LL	
380-73688-8	TB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	8015B GRO LL	
MB 570-392181/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-392181/4	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-392181/5	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-392181/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-73688-4 MS	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	
380-73688-4 MSD	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	

GC Semi VOA

Prep Batch: 390859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-73688-1	MOANALUA WELLS	Total/NA	Drinking Water	3510C	
380-73688-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	3510C	
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	3510C	
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	3510C	
MB 570-390859/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-390859/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-390859/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MRL 570-390859/4-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 392472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-73688-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B	
380-73688-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B	
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B	
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B	
MB 570-392472/3	Method Blank	Total/NA	Water	8015B	
LCS 570-392472/4	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-392472/5	Lab Control Sample Dup	Total/NA	Water	8015B	
MRL 570-392472/6	Lab Control Sample	Total/NA	Water	8015B	
570-163648-A-1 MS	Matrix Spike	Total/NA	Water	8015B	
570-163648-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	

Analysis Batch: 397207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-73688-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B	390859
380-73688-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B	390859
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B	390859
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B	390859
MB 570-390859/1-A	Method Blank	Total/NA	Water	8015B	390859
LCS 570-390859/2-A	Lab Control Sample	Total/NA	Water	8015B	390859
LCSD 570-390859/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	390859
MRL 570-390859/4-A	Lab Control Sample	Total/NA	Water	8015B	390859

QC Association Summary

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

Job ID: 380-73688-2

Subcontract

Analysis Batch: O-44036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-73688-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44036_P
380-73688-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44036_P
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44036_P
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44036_P
113366-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44036_P
113366-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44036_P
113366-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44036_P

Prep Batch: O-44036_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-73688-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
380-73688-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	EPA_625	
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	EPA_625	
113366-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
113366-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
113366-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-73688-2

Client Sample ID: MOANALUA WELLS
Date Collected: 12/04/23 10:04
Date Received: 12/06/23 10:30

Lab Sample ID: 380-73688-1
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	392181	A9VE	EET CAL 4	12/13/23 14:54
Total/NA	Prep	3510C			390859	TR8L	EET CAL 4	12/08/23 14:02
Total/NA	Analysis	8015B		1	397207	SP9M	EET CAL 4	12/29/23 15:52
Total/NA	Analysis	8015B		1	392472	J7WE	EET CAL 4	12/14/23 00:11
Total/NA	Prep	EPA_625		1	O-44036_P			12/11/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44036	YC		12/25/23 11:29

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 12/04/23 10:53
Date Received: 12/06/23 10:30

Lab Sample ID: 380-73688-2
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	392181	A9VE	EET CAL 4	12/13/23 15:20
Total/NA	Prep	3510C			390859	TR8L	EET CAL 4	12/08/23 14:02
Total/NA	Analysis	8015B		1	397207	SP9M	EET CAL 4	12/29/23 16:13
Total/NA	Analysis	8015B		1	392472	J7WE	EET CAL 4	12/14/23 00:33
Total/NA	Prep	EPA_625		1	O-44036_P			12/11/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44036	YC		12/25/23 09:44

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 12/04/23 11:20
Date Received: 12/06/23 10:30

Lab Sample ID: 380-73688-3
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	392181	A9VE	EET CAL 4	12/13/23 15:46
Total/NA	Prep	3510C			390859	TR8L	EET CAL 4	12/08/23 14:02
Total/NA	Analysis	8015B		1	397207	SP9M	EET CAL 4	12/29/23 16:34
Total/NA	Analysis	8015B		1	392472	J7WE	EET CAL 4	12/14/23 00:55
Total/NA	Prep	EPA_625		1	O-44036_P			12/11/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44036	YC		12/25/23 13:13

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 12/04/23 10:29
Date Received: 12/06/23 10:30

Lab Sample ID: 380-73688-4
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	392181	A9VE	EET CAL 4	12/13/23 16:12
Total/NA	Prep	3510C			390859	TR8L	EET CAL 4	12/08/23 14:02
Total/NA	Analysis	8015B		1	397207	SP9M	EET CAL 4	12/29/23 16:55
Total/NA	Analysis	8015B		1	392472	J7WE	EET CAL 4	12/14/23 01:17
Total/NA	Prep	EPA_625		1	O-44036_P			12/11/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44036	YC		12/25/23 14:58

Lab Chronicle

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

Job ID: 380-73688-2

Client Sample ID: TB MOANALUA WELLS
Lab Sample ID: 380-73688-5
Date Collected: 12/04/23 10:04
Matrix: Water
Date Received: 12/06/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	392181	A9VE	EET CAL 4	12/13/23 13:09

Client Sample ID: TB AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-73688-6
Date Collected: 12/04/23 10:53
Matrix: Water
Date Received: 12/06/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	392181	A9VE	EET CAL 4	12/13/23 13:35

Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-73688-7
Date Collected: 12/04/23 11:20
Matrix: Water
Date Received: 12/06/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	392181	A9VE	EET CAL 4	12/13/23 14:01

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-73688-8
Date Collected: 12/04/23 10:29
Matrix: Water
Date Received: 12/06/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	392181	A9VE	EET CAL 4	12/13/23 14:28

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: 380-73688-2

Laboratory: Eurofins Calscience

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

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

Method Summary

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

Job ID: 380-73688-2

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
8015B	Nonhalogenated Organic Compounds - Direct Injection (GC)	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: 380-73688-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-73688-1	MOANALUA WELLS	Drinking Water	12/04/23 10:04	12/06/23 10:30	HI0000331
380-73688-2	AIEA GULCH WELLS PUMP 2	Drinking Water	12/04/23 10:53	12/06/23 10:30	HI0000331
380-73688-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	12/04/23 11:20	12/06/23 10:30	HI0000331
380-73688-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	12/04/23 10:29	12/06/23 10:30	HI0000331
380-73688-5	TB MOANALUA WELLS	Water	12/04/23 10:04	12/06/23 10:30	HI0000331
380-73688-6	TB AIEA GULCH WELLS PUMP 2	Water	12/04/23 10:53	12/06/23 10:30	HI0000331
380-73688-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Water	12/04/23 11:20	12/06/23 10:30	HI0000331
380-73688-8	TB HALAWA WELLS UNITS 1 & 2 P1	Water	12/04/23 10:29	12/06/23 10:30	HI0000331

December 27, 2023

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

Project Name: RED-HILL Porject # 38001111 Job # 380-7388-1
Physis Project ID: 1407003-464

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 12/7/2023. A total of 4 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

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

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

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

Regards,

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

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-464

RED-HILL Porject # 38001111 Job # 380-7388-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
113367	MOANALUA WELLS	380-73688-1	12/4/2023	10:04	Samplewater	Not Specified
113368	AIEA GULCH WELLS PUMP: 2	380-73688-2	12/4/2023	10:53	Samplewater	Not Specified
113369	AIEA WELLS PUMPS 1&2 (260) P2	380-73688-3	12/4/2023	11:20	Samplewater	Not Specified
113370	HALAWA WELLS UNITS 1 & 2 P1	380-73688-4	12/4/2023	10:29	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: 1407003-464
Client: Eurofins Eaton Analytical
Project: RED-HILL Porject # 38001111 Job # 380-7388-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 113367-R1	**MOANALUA WELLS 380-73688-1**	**Matrix:**	**Samplewater**				**Sampled:**	**04-Dec-23 10:04**		**Received:**	**07-Dec-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44036	11-Dec-23	25-Dec-23
Sample ID: 113368-R1	**AIEA GULCH WELLS PUMP: 2 380-7**	**Matrix:**	**Samplewater**				**Sampled:**	**04-Dec-23 10:53**		**Received:**	**07-Dec-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44036	11-Dec-23	25-Dec-23
Sample ID: 113369-R1	**AIEA WELLS PUMPS 1&2 (260) P2 3**	**Matrix:**	**Samplewater**				**Sampled:**	**04-Dec-23 11:20**		**Received:**	**07-Dec-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44036	11-Dec-23	25-Dec-23
Sample ID: 113370-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**	**Matrix:**	**Samplewater**				**Sampled:**	**04-Dec-23 10:29**		**Received:**	**07-Dec-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44036	11-Dec-23	25-Dec-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 113367-R1	**MOANALUA WELLS 380-73688-1**		**Matrix: Samplewater**				**Sampled: 04-Dec-23 10:04**			**Received: 07-Dec-23**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	62	1			Total		O-44036	11-Dec-23	25-Dec-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	64	1			Total		O-44036	11-Dec-23	25-Dec-23
(d12-Chrysene)	EPA 625.1	% Recovery	80	1			Total		O-44036	11-Dec-23	25-Dec-23
(d12-Perylene)	EPA 625.1	% Recovery	82	1			Total		O-44036	11-Dec-23	25-Dec-23
(d8-Naphthalene)	EPA 625.1	% Recovery	65	1			Total		O-44036	11-Dec-23	25-Dec-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23

PHYSIS Project ID: 1407003-464
Client: Eurofins Eaton Analytical
Project: RED-HILL Porject # 38001111 Job # 380-7388-1

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-44036	11-Dec-23	25-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 113368-R1	**AIEA GULCH WELLS PUMP: 2 380-7 Matrix: Samplewater**						**Sampled: 04-Dec-23 10:53**			**Received: 07-Dec-23**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	63	1			Total		O-44036	11-Dec-23	25-Dec-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	67	1			Total		O-44036	11-Dec-23	25-Dec-23
(d12-Chrysene)	EPA 625.1	% Recovery	100	1			Total		O-44036	11-Dec-23	25-Dec-23
(d12-Perylene)	EPA 625.1	% Recovery	93	1			Total		O-44036	11-Dec-23	25-Dec-23
(d8-Naphthalene)	EPA 625.1	% Recovery	75	1			Total		O-44036	11-Dec-23	25-Dec-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 113369-R1	**AIEA WELLS PUMPS 1&2 (260) P2 3 Matrix: Samplewater**						**Sampled: 04-Dec-23 11:20**			**Received: 07-Dec-23**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	87	1			Total		O-44036	11-Dec-23	25-Dec-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	95	1			Total		O-44036	11-Dec-23	25-Dec-23
(d12-Chrysene)	EPA 625.1	% Recovery	96	1			Total		O-44036	11-Dec-23	25-Dec-23
(d12-Perylene)	EPA 625.1	% Recovery	97	1			Total		O-44036	11-Dec-23	25-Dec-23
(d8-Naphthalene)	EPA 625.1	% Recovery	91	1			Total		O-44036	11-Dec-23	25-Dec-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 113370-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**	**Matrix: Samplewater**					**Sampled: 04-Dec-23 10:29**			**Received: 07-Dec-23**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	94	1			Total		O-44036	11-Dec-23	25-Dec-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	93	1			Total		O-44036	11-Dec-23	25-Dec-23
(d12-Chrysene)	EPA 625.1	% Recovery	84	1			Total		O-44036	11-Dec-23	25-Dec-23
(d12-Perylene)	EPA 625.1	% Recovery	83	1			Total		O-44036	11-Dec-23	25-Dec-23
(d8-Naphthalene)	EPA 625.1	% Recovery	90	1			Total		O-44036	11-Dec-23	25-Dec-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23

PHYSIS Project ID: 1407003-464
Client: Eurofins Eaton Analytical
Project: RED-HILL Porject # 38001111 Job # 380-7388-1

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-44036	11-Dec-23	25-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44036	11-Dec-23	25-Dec-23

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: 113366-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**				
		Method: EPA 625.1				Batch ID: O-44036		Prepared: 11-Dec-23			Analyzed: 25-Dec-23				
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L									
Sample ID: 113366-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**				
		Method: EPA 625.1				Batch ID: O-44036		Prepared: 11-Dec-23			Analyzed: 25-Dec-23				
Disalicylidenepropanediamin	Total	69.2	1	0.05	0.1	µg/L	50	0	138	50 - 150%	PASS				
Sample ID: 113366-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**				
		Method: EPA 625.1				Batch ID: O-44036		Prepared: 11-Dec-23			Analyzed: 25-Dec-23				
Disalicylidenepropanediamin	Total	75.2	1	0.05	0.1	µg/L	50	0	150	50 - 150%	PASS	8	30	PASS	

PHYSIS Project ID: 1407003-464
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Project: RED-HILL Porject # 38001111 Job # 380-7388-1

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: 113366-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
	Method: EPA 625.1					Batch ID: O-44036		Prepared: 11-Dec-23				Analyzed: 25-Dec-23	
(d10-Acenaphthene)	Total	93	1			% Recovery	100	93	27 - 133%	PASS			
(d10-Phenanthrene)	Total	102	1			% Recovery	100	102	43 - 129%	PASS			
(d12-Chrysene)	Total	76	1			% Recovery	100	76	52 - 144%	PASS			
(d12-Perylene)	Total	104	1			% Recovery	100	104	36 - 161%	PASS			
(d8-Naphthalene)	Total	105	1			% Recovery	100	105	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: 1407003-464
Client: Eurofins Eaton Analytical
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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: 113366-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
		Method: EPA 625.1				Batch ID: O-44036		Prepared: 11-Dec-23				Analyzed: 25-Dec-23	
(d10-Acenaphthene)	Total	86	1			% Recovery	100	0	86	27 - 133%	PASS		
(d10-Phenanthrene)	Total	99	1			% Recovery	100	0	99	43 - 129%	PASS		
(d12-Chrysene)	Total	102	1			% Recovery	100	0	102	52 - 144%	PASS		
(d12-Perylene)	Total	100	1			% Recovery	100	0	100	36 - 161%	PASS		
(d8-Naphthalene)	Total	91	1			% Recovery	100	0	91	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.423	1	0.001	0.005	µg/L	0.5	0	85	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.4	1	0.001	0.005	µg/L	0.5	0	80	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.485	1	0.001	0.005	µg/L	0.5	0	97	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	48 - 120%	PASS		
2-Methylnaphthalene	Total	0.423	1	0.001	0.005	µg/L	0.5	0	85	47 - 130%	PASS		
Acenaphthene	Total	0.418	1	0.001	0.005	µg/L	0.5	0	84	53 - 131%	PASS		
Acenaphthylene	Total	0.403	1	0.001	0.005	µg/L	0.5	0	81	43 - 140%	PASS		
Anthracene	Total	0.504	1	0.001	0.005	µg/L	0.5	0	101	58 - 135%	PASS		
Benz[a]anthracene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	55 - 145%	PASS		
Benzo[a]pyrene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	0.419	1	0.001	0.005	µg/L	0.5	0	84	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.438	1	0.001	0.005	µg/L	0.5	0	88	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	0.462	1	0.001	0.005	µg/L	0.5	0	92	56 - 145%	PASS		
Biphenyl	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	56 - 119%	PASS		
Chrysene	Total	0.491	1	0.001	0.005	µg/L	0.5	0	98	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.457	1	0.001	0.005	µg/L	0.5	0	91	50 - 150%	PASS		

PHYSIS Project ID: 1407003-464
Client: Eurofins Eaton Analytical
Project: RED-HILL Porject # 38001111 Job # 380-7388-1

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	0.45	1	0.001	0.005	µg/L	0.5	0	90	46 - 126%	PASS			
Fluoranthene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	60 - 146%	PASS			
Fluorene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.488	1	0.001	0.005	µg/L	0.5	0	98	50 - 151%	PASS			
Naphthalene	Total	0.471	1	0.001	0.005	µg/L	0.5	0	94	41 - 126%	PASS			
Perylene	Total	0.398	1	0.001	0.005	µg/L	0.5	0	80	48 - 141%	PASS			
Phenanthrene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	67 - 127%	PASS			
Pyrene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	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: 113366-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-44036		Prepared: 11-Dec-23			Analyzed: 25-Dec-23			
(d10-Acenaphthene)	Total	85	1			% Recovery	100	0	85	27 - 133%	PASS	1	30	PASS
(d10-Phenanthrene)	Total	101	1			% Recovery	100	0	101	43 - 129%	PASS	2	30	PASS
(d12-Chrysene)	Total	91	1			% Recovery	100	0	91	52 - 144%	PASS	11	30	PASS
(d12-Perylene)	Total	89	1			% Recovery	100	0	89	36 - 161%	PASS	12	30	PASS
(d8-Naphthalene)	Total	92	1			% Recovery	100	0	92	25 - 125%	PASS	1	30	PASS
1-Methylnaphthalene	Total	0.435	1	0.001	0.005	µg/L	0.5	0	87	31 - 128%	PASS	2	30	PASS
1-Methylphenanthrene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	66 - 127%	PASS	14	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.473	1	0.001	0.005	µg/L	0.5	0	95	55 - 122%	PASS	2	30	PASS
2,6-Dimethylnaphthalene	Total	0.456	1	0.001	0.005	µg/L	0.5	0	91	48 - 120%	PASS	2	30	PASS
2-Methylnaphthalene	Total	0.421	1	0.001	0.005	µg/L	0.5	0	84	47 - 130%	PASS	1	30	PASS
Acenaphthene	Total	0.445	1	0.001	0.005	µg/L	0.5	0	89	53 - 131%	PASS	6	30	PASS
Acenaphthylene	Total	0.413	1	0.001	0.005	µg/L	0.5	0	83	43 - 140%	PASS	2	30	PASS
Anthracene	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	58 - 135%	PASS	2	30	PASS
Benz[a]anthracene	Total	0.409	1	0.001	0.005	µg/L	0.5	0	82	55 - 145%	PASS	11	30	PASS
Benzo[a]pyrene	Total	0.459	1	0.001	0.005	µg/L	0.5	0	92	51 - 143%	PASS	0	30	PASS
Benzo[b]fluoranthene	Total	0.421	1	0.001	0.005	µg/L	0.5	0	84	46 - 165%	PASS	0	30	PASS
Benzo[e]pyrene	Total	0.402	1	0.001	0.005	µg/L	0.5	0	80	42 - 152%	PASS	10	30	PASS
Benzo[g,h,i]perylene	Total	0.475	1	0.001	0.005	µg/L	0.5	0	95	63 - 133%	PASS	7	30	PASS
Benzo[k]fluoranthene	Total	0.462	1	0.001	0.005	µg/L	0.5	0	92	56 - 145%	PASS	0	30	PASS
Biphenyl	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	56 - 119%	PASS	3	30	PASS
Chrysene	Total	0.448	1	0.001	0.005	µg/L	0.5	0	90	56 - 141%	PASS	9	30	PASS
Dibenz[a,h]anthracene	Total	0.476	1	0.001	0.005	µg/L	0.5	0	95	55 - 150%	PASS	4	30	PASS
Dibenzo[a,l]pyrene	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	50 - 150%	PASS	8	30	PASS

PHYSIS Project ID: 1407003-464
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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	0.466	1	0.001	0.005	µg/L	0.5	0	93	46 - 126%	PASS	3	30	PASS	
Fluoranthene	Total	0.48	1	0.001	0.005	µg/L	0.5	0	96	60 - 146%	PASS	5	30	PASS	
Fluorene	Total	0.477	1	0.001	0.005	µg/L	0.5	0	95	58 - 131%	PASS	4	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	50 - 151%	PASS	2	30	PASS	
Naphthalene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	41 - 126%	PASS	5	30	PASS	
Perylene	Total	0.404	1	0.001	0.005	µg/L	0.5	0	81	48 - 141%	PASS	1	30	PASS	
Phenanthrene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	67 - 127%	PASS	1	30	PASS	
Pyrene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	54 - 156%	PASS	1	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: Lab Blank B1_44036

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.5293	1.3595	1111	Anthracene-D10-	1517-22-2	89
11.6622	2.2257	1819	3,3-Dimethylacryloyl chloride	3350-78-5	82
11.0827	2.0563	1681	2-(Chloromethyl)tetrahydropyran	18420-41-2	84
11.9311	0.6233	509	Octane, 4,5-diethyl-	1636-41-5	93
12.7658	0.5070	414	Cyclooctane, cyclohexyl-	92369-78-3	89
13.1248	0.4523	370	Cyclohexane, octyl-	1795-15-9	86
12.6177	0.2725	223	Cyclohexane, 3-ethyl-5-methyl-1-propyl-	1000151-39-5	82
12.9086	0.2645	216	(Z)-(Z)-Hex-3-en-1-yl 2-methylbut-2-enoate	84060-80-0	85
12.1841	0.2039	167	Heptane, 2,3-dimethyl-	3074-71-3	91
12.1832	0.1590	130	Octane, 3,4-dimethyl-	15869-92-8	92
12.1386	0.1365	112	Piperidine	110-89-4	85
14.3812	0.1013	83	(Z)-(Z)-Hex-3-en-1-yl 2-methylbut-2-enoate	84060-80-0	88

Concentration estimated using the response for Anthracene-d10

Sample ID: 113370

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.9558	2.1949	1111	Anthracene-D10-	1719-06-8	84
10.1481	1.5682	794	5-Amino-2-methyl-2H-tetrazole	1553840	92
12.7564	1.0002	506	Cyclooctane, cyclohexyl-	92369-78-3	89
11.9132	0.7497	380	Nonane, 4-ethyl-5-methyl-	1632-71-9	92
11.9429	0.6866	348	Octane, 4,5-diethyl-	1636-41-5	83
11.9107	0.6138	311	Nonane, 4-ethyl-5-methyl-	1632-71-9	91
13.1219	0.6053	306	Cyclohexane, octyl-	1795-15-9	87
29.5837	0.3222	163	Benzoic acid, 2-ethylhexyl ester	5444-75-7	80

Concentration estimated using the response for Anthracene-d10

Sample ID: 113368

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.9732	2.3445	1111	Anthracene-D10-	1719-06-8	93
11.0853	2.8025	1328	2-(Chloromethyl)tetrahydropyran	18420-41-2	83
11.6661	2.5098	1189	3,3-Dimethylacryloyl chloride	3350-78-5	81
10.8552	1.7208	816	2H-Pyran-2-methanol, tetrahydro-	100-72-1	83
11.9370	0.4144	196	Octane, 4,5-diethyl-	1636-41-5	85
66.3468	0.3387	161	1,5,9-Undecatriene, 2,6,10-trimethyl-, (Z)-	62951-96-6	83

Concentration estimated using the response for Anthracene-d10

Sample ID: 113369

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.9354	1.9268	1111	Anthracene-D10-	1719-06-8	92
11.6597	1.7810	1027	Cyclopropane, 2-chloro-1,1,3-trimethyl-	98485-99-5	82
11.0809	1.2778	737	Hexane, 2-nitro-	14255-44-8	82
10.8496	0.9427	544	2-(Chloromethyl)tetrahydropyran	18420-41-2	81
10.8494	0.9252	534	2H-Pyran-2-methanol, tetrahydro-	100-72-1	82
11.9400	0.8931	515	Octane, 4,5-diethyl-	1636-41-5	84
12.7637	0.8830	509	Cyclooctane, cyclohexyl-	92369-78-3	87
25.2569	0.7311	422	Diethyl Phthalate	84-66-2	95
13.6039	0.6107	352	Cyclohexaneethanol	4442-79-9	83
13.1232	0.6051	349	Cyclohexane, octyl-	1795-15-9	89
29.5673	0.3251	187	Benzoic acid, 2-ethylhexyl ester	5444-75-7	84
12.1372	0.3083	178	Decane, 5,6-dimethyl-	1636-43-7	87
11.9228	0.2093	121	1H-Tetrazol-5-amine	4418-61-5	83
77.7248	0.1560	90	l-Norvaline, N-ethoxycarbonyl-, nonyl ester	1010320-70-6	81

Concentration estimated using the response for Anthracene-d10

Sample ID: 113367

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.5562	0.8065	1111	Anthracene-D10-	1719-06-8	87
11.6607	2.5144	3464	3,3-Dimethylacryloyl chloride	3350-78-5	82
10.1378	2.3474	3234	5-Amino-2-methyl-2H-tetrazole	1553840	85
11.0814	2.0931	2884	2-(Chloromethyl)tetrahydropyran	18420-41-2	82
10.8496	1.3706	1888	2H-Pyran-2-methanol, tetrahydro-	100-72-1	85
11.9417	1.0795	1487	Octane, 4,5-diethyl-	1636-41-5	84
12.7642	0.8084	1114	Cyclooctane, cyclohexyl-	92369-78-3	90
13.1225	0.6661	918	Cyclohexane, octyl-	1795-15-9	88
12.9062	0.3805	524	Cyclopentane, 1-methyl-2-(2-propenyl)-, trans-	50746-53-7	86
12.1369	0.2284	315	Decane, 5,6-dimethyl-	1636-43-7	89
14.3788	0.2260	311	3,4-Nonadiene	37050-03-6	82
13.7957	0.2179	300	3-Octyne, 2-methyl-	55402-15-8	81

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

1/18/2024

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-93752.1
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 #: 380-73688-1
Address: 1904 Wright Circle, ,	Due Date Requested: 12/18/2023			
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:

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 - 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 (380-73688-1)	12/4/23	10:04 Hawaiian		Water			X	2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (380-73688-2)	12/4/23	10:53 Hawaiian		Water			X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) P2 (380-73688-3)	12/4/23	11:20 Hawaiian		Water			X	2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 P1 (380-73688-4)	12/4/23	10:29 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]	12/7/23 1416	CEA	CEASAR NWADIKE	12/7/23 1418	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: 1407003-464
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Porject # 38001111 Job # 380-7388-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: CN
2. Date Received: 12/7/23
3. Time Received: 1418
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

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 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	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code				R	R	RA		RA	Y	N		
MOANALUA WELLS	4-Dec-2023	1004	G	Water			2		2	2	4				chlorinated
AIEA GULCH WELLS PUMP2	4-Dec-2023	1053	G	Water			2		2	2	4				chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	4-Dec-2023	1120	G	Water			2		2	2	4				1 OUT OF 4 ARRIVED BROKEN-LP
HALAWA WELLS UNITS 1&2 P1	4-Dec-2023	1029	G	Water			2		2	2	4				2 OUT OF 4 ARRIVED BROKEN - LP 12/06/2023
TB MOANALUA WELLS	4-Dec-2023	1004		Water							2				
TB AIEA GULCH WELLS PUMP2	4-Dec-2023	1053		Water							2				
TB AIEA WELLS PUMPS 1&2 (260)	4-Dec-2023	1120		Water							2				
TB HALAWA WELLS UNITS 1&2	4-Dec-2023	1029		Water							2				

380-73688 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) 7743 6094 4935
(2) 7743 6094 4936
(3) 7743 6094 4947

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
BAILEY	05 DEC. 2023 1400	HBWS	G. REITNER	12/06/2023 10 30	EEAP

Custody Seals Intact: Δ Yes Δ No | Custody Seal No:

Cooler Temperature(s) °C and Other Remarks: (751A) (1) 2.0° 0.1° 1.9° (2) 2.9° 0.1° 2.8° (3) 0.9° 0.1° 0.8° GEL-FROZEN

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

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:			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	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525 2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537 1_DW_PREC - 537 1 Full List	533 - All Analytes							Total Number of containers	Special Instructions/Note:
			Preservation Code				R	R	RA		RA	Y	N								
MOANALUA WELLS	4-Dec-2023	1004	G	Water								3	3								chlorinated
AIEA GULCH WELLS PUMP2	4-Dec-2023	1053	G	Water								3	3								chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	4-Dec-2023	120	G	Water								3	3								
HALAWA WELLS UNITS 1&2 P1	4-Dec-2023	1029	G	Water								3	3								
FB MOANALUA WELLS	4-Dec-2023	1004		Water								1	1								
FB AIEA GULCH WELLS PUMP2	4-Dec-2023	1053		Water								1	1								
FB AIEA WELLS PUMPS 1&2 (260)	4-Dec-2023	1120		Water								1	1								
FB HALAWA WELLS UNITS 1&2	4-Dec-2023	1029		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: (1) 7743 6094 4925 (2) 7743 6094 4936

Empty Kit Relinquished by	Date	Time	Method of Shipment: FED Ex (3) 7743 6094 4947

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
BAILEY	05 dec 2023 1400	HBWS	G REITNER	12/06/2023 1030	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
		(7574) (1) 2.0°-0.1-1.9° (2) 2.4°-0.1-2.8° (3) 0.9°-0.1-0.8° GEL FROZEN

Ver 01/16/2019

1/18/2024

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-73688-2

Login Number: 73688
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.	False	Refer to NCM for affected items.
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: 380-73688-2

Login Number: 73688
List Number: 2
Creator: Khana, Piyush

List Source: Eurofins Calscience
List Creation: 12/07/23 02:04 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	Seal present with no number.
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	0.8
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.	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	
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	