eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

RED-HILL

JOB NUMBER

380-70278-2

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

See page two for job notes and contact information.

Job Notes

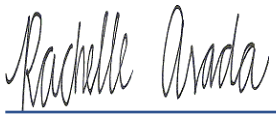
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Compliance Statement

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

Authorization



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Authorized for release by
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Table of Contents

Definitions/Glossary

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

Job ID: 380-70278-2

Qualifiers

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

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

Case Narrative

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

Job ID: 380-70278-2

Job ID: 380-70278-2

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative
380-70278-2

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 11/8/2023 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 1.2°C, 1.6°C and 2.0°C

Receipt Exceptions
One of four 8015 vials from sites AIEA WELLS PUMPS 1&2 (260) P2 & HALAWA WELLS UNITS 1&2 P1 arrived broken

Subcontract Work
Methods 8015 Gas (Purgeable) LL (EAL), 8015 LL DRO/MRO/JP5/JP8: These methods were subcontracted to EMAX Laboratories Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

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.

Detection Summary

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

Job ID: 380-70278-2

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-70278-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-70278-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-70278-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-70278-4

No Detections.

Client Sample ID: TB MOANALUA WELLS — Lab Sample ID: 380-70278-5

No Detections.

Client Sample ID: TB AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-70278-6

No Detections.

Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-70278-7

No Detections.

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-70278-8

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-70278-2

Client Sample ID: MOANALUA WELLS

Date Collected: 11/06/23 09:51
Date Received: 11/08/23 10:30

Lab Sample ID: 380-70278-1

Matrix: Drinking Water

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		11/13/23 00:00	11/23/23 15:44	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Acenaphthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Biphenyl	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Chrysene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/13/23 00:00	11/23/23 15:44	1
Fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Fluorene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Naphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Phenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1
Pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 15:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*75*		*27 - 133*	*11/13/23 00:00*	*11/23/23 15:44*	*1*
(d10-Phenanthrene)	*75*		*43 - 129*	*11/13/23 00:00*	*11/23/23 15:44*	*1*
(d12-Chrysene)	*93*		*52 - 144*	*11/13/23 00:00*	*11/23/23 15:44*	*1*
(d12-Perylene)	*101*		*36 - 161*	*11/13/23 00:00*	*11/23/23 15:44*	*1*
(d8-Naphthalene)	*105*		*25 - 125*	*11/13/23 00:00*	*11/23/23 15:44*	*1*

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			11/10/23 01:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*79*		*60 - 140*		*11/10/23 01:33*	*1*

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.027		mg/L			11/21/23 14:56	1
JP5	ND	U	0.054		mg/L			11/21/23 14:56	1
JP8	ND	U	0.054		mg/L			11/21/23 14:56	1
MOTOR OIL	ND	U	0.054		mg/L			11/21/23 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*67*		*60 - 130*		*11/21/23 14:56*	*1*

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-70278-1
Matrix: Drinking Water
Date Collected: 11/06/23 09:51
Date Received: 11/08/23 10:30

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
HEXACOSANE	*86*		*60 - 130*		*11/21/23 14:56*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-70278-2
Matrix: Drinking Water
Date Collected: 11/06/23 10:54
Date Received: 11/08/23 10:30

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		11/13/23 00:00	11/23/23 17:31	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Acenaphthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Biphenyl	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Chrysene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/13/23 00:00	11/23/23 17:31	1
Fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Fluorene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Naphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Phenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1
Pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*69*		*27 - 133*	*11/13/23 00:00*	*11/23/23 17:31*	*1*
(d10-Phenanthrene)	*60*		*43 - 129*	*11/13/23 00:00*	*11/23/23 17:31*	*1*
(d12-Chrysene)	*96*		*52 - 144*	*11/13/23 00:00*	*11/23/23 17:31*	*1*
(d12-Perylene)	*104*		*36 - 161*	*11/13/23 00:00*	*11/23/23 17:31*	*1*
(d8-Naphthalene)	*98*		*25 - 125*	*11/13/23 00:00*	*11/23/23 17:31*	*1*

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			11/10/23 03:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*81*		*60 - 140*		*11/10/23 03:57*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-70278-2

Date Collected: 11/06/23 10:54

Matrix: Drinking Water

Date Received: 11/08/23 10:30

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.029		mg/L			11/21/23 15:15	1
JP5	ND	U	0.058		mg/L			11/21/23 15:15	1
JP8	ND	U	0.058		mg/L			11/21/23 15:15	1
MOTOR OIL	ND	U	0.058		mg/L			11/21/23 15:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*62*		*60 - 130*		*11/21/23 15:15*	*1*
HEXACOSANE	*85*		*60 - 130*		*11/21/23 15:15*	*1*

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

Lab Sample ID: 380-70278-3

Date Collected: 11/06/23 11:22

Matrix: Drinking Water

Date Received: 11/08/23 10:30

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		11/13/23 00:00	11/23/23 19:17	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Acenaphthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Biphenyl	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Chrysene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/13/23 00:00	11/23/23 19:17	1
Fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Fluorene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Naphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Phenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1
Pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*45*		*27 - 133*	*11/13/23 00:00*	*11/23/23 19:17*	*1*
(d10-Phenanthrene)	*53*		*43 - 129*	*11/13/23 00:00*	*11/23/23 19:17*	*1*
(d12-Chrysene)	*128*		*52 - 144*	*11/13/23 00:00*	*11/23/23 19:17*	*1*
(d12-Perylene)	*102*		*36 - 161*	*11/13/23 00:00*	*11/23/23 19:17*	*1*
(d8-Naphthalene)	*120*		*25 - 125*	*11/13/23 00:00*	*11/23/23 19:17*	*1*

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

Lab Sample ID: 380-70278-3

Date Collected: 11/06/23 11:22

Matrix: Drinking Water

Date Received: 11/08/23 10:30

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			11/10/23 04:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*81*		*60 - 140*		*11/10/23 04:33*	*1*

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.03		mg/L			11/21/23 15:33	1
JP5	ND	U	0.059		mg/L			11/21/23 15:33	1
JP8	ND	U	0.059		mg/L			11/21/23 15:33	1
MOTOR OIL	ND	U	0.059		mg/L			11/21/23 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*64*		*60 - 130*		*11/21/23 15:33*	*1*
HEXACOSANE	*85*		*60 - 130*		*11/21/23 15:33*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-70278-4

Date Collected: 11/06/23 10:27

Matrix: Drinking Water

Date Received: 11/08/23 10:30

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		11/13/23 00:00	11/23/23 21:04	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Acenaphthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Biphenyl	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Chrysene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/13/23 00:00	11/23/23 21:04	1
Fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Fluorene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Naphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Phenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1
Pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 21:04	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-70278-4
Matrix: Drinking Water
Date Collected: 11/06/23 10:27
Date Received: 11/08/23 10:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	66		27 - 133	11/13/23 00:00	11/23/23 21:04	1
(d10-Phenanthrene)	52		43 - 129	11/13/23 00:00	11/23/23 21:04	1
(d12-Chrysene)	97		52 - 144	11/13/23 00:00	11/23/23 21:04	1
(d12-Perylene)	106		36 - 161	11/13/23 00:00	11/23/23 21:04	1
(d8-Naphthalene)	119		25 - 125	11/13/23 00:00	11/23/23 21:04	1

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			11/10/23 05:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	80		60 - 140		11/10/23 05:09	1

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.03		mg/L			11/21/23 15:52	1
JP5	ND	U	0.059		mg/L			11/21/23 15:52	1
JP8	ND	U	0.059		mg/L			11/21/23 15:52	1
MOTOR OIL	ND	U	0.059		mg/L			11/21/23 15:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	64		60 - 130		11/21/23 15:52	1
HEXACOSANE	88		60 - 130		11/21/23 15:52	1

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-70278-5
Matrix: Water
Date Collected: 11/06/23 09:51
Date Received: 11/08/23 10:30

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			11/10/23 05:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	79		60 - 140		11/10/23 05:45	1

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-70278-6
Matrix: Water
Date Collected: 11/06/23 10:54
Date Received: 11/08/23 10:30

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			11/10/23 06:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	79		60 - 140		11/10/23 06:21	1

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

Lab Sample ID: 380-70278-7
Matrix: Water
Date Collected: 11/06/23 11:22
Date Received: 11/08/23 10:30

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			11/10/23 06:57	1

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

Job ID: 380-70278-2

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

Lab Sample ID: 380-70278-7

Date Collected: 11/06/23 11:22
Matrix: Water
Date Received: 11/08/23 10:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*78*		*60 - 140*		*11/10/23 06:57*	*1*

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

Lab Sample ID: 380-70278-8

Date Collected: 11/06/23 10:27
Matrix: Water
Date Received: 11/08/23 10:30

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			11/10/23 07:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*80*		*60 - 140*		*11/10/23 07:33*	*1*

Surrogate Summary

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

Job ID: 380-70278-2

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

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

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
112795-B1	Method Blank	122	117	111	120	106
112795-BS1	Lab Control Sample	81	102	105	124	107
112795-BS2	Lab Control Sample Dup	87	111	126	121	109

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
380-70278-1	MOANALUA WELLS	75	75	93	105	101
380-70278-2	AIEA GULCH WELLS PUMP 2	69	60	96	98	104
380-70278-3	AIEA WELLS PUMPS 1&2 (260) P2	45	53	128	120	102
380-70278-4	HALAWA WELLS UNITS 1 & 2 P1	66	52	97	119	106

Surrogate Legend

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

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-70278-1	MOANALUA WELLS	79
380-70278-2	AIEA GULCH WELLS PUMP 2	81
380-70278-3	AIEA WELLS PUMPS 1&2 (260) P2	81
380-70278-4	HALAWA WELLS UNITS 1 & 2 P1	80

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-70278-2

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-70278-5	TB MOANALUA WELLS	79
380-70278-6	TB AIEA GULCH WELLS PUMP 2	79
380-70278-7	TB AIEA WELLS PUMPS 1&2 (260) P2	78
380-70278-8	TB HALAWA WELLS UNITS 1 & 2 P1	80

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
23K066-01M	Matrix Spike	100
23K066-01S	Matrix Spike Duplicate	105

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	
23VG39K04B	Method Blank	

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(70-130)
23VG39K04C	LCD	104
23VG39K04L	Lab Control Sample	109

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSA
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
380-70278-1	MOANALUA WELLS	67	86
380-70278-2	AIEA GULCH WELLS PUMP 2	62	85

Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-70278-2
Project/Site: RED-HILL

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO (Continued)

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

		Percent Surrogate Recovery (Acceptance Limits)									
		BB	XACOSA								
Lab Sample ID	Client Sample ID	(60-130)	(60-130)								
380-70278-3	AIEA WELLS PUMPS 1&2 (260)	64	85								
380-70278-4	HALAWA WELLS UNITS 1 & 2 P1	64	88								

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)									
		BB	XACOSA								
Lab Sample ID	Client Sample ID										
23DSK012WB	Method Blank										

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)									
		BB	XACOSA								
Lab Sample ID	Client Sample ID	(60-130)	(60-130)								
23DSK012WC	LCD	77	98								
23DSK012WL	Lab Control Sample	73	101								
23J5K012WC	LCD	77	93								
23J5K012WL	Lab Control Sample	63	88								
23J8K012WC	LCD	86	94								
23J8K012WL	Lab Control Sample	80	94								

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

Lab Sample ID: 112795-B1
Matrix: BlankMatrix
Analysis Batch: O-44006

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-44006_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Acenaphthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Biphenyl	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Chrysene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/13/23 00:00	11/23/23 10:25	1
Fluoranthene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Fluorene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Naphthalene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Perylene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Phenanthrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1
Pyrene	ND		0.005	0.001	µg/L		11/13/23 00:00	11/23/23 10:25	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*122*		*27 - 133*	*11/13/23 00:00*	*11/23/23 10:25*	*1*
(d10-Phenanthrene)	*117*		*43 - 129*	*11/13/23 00:00*	*11/23/23 10:25*	*1*
(d12-Chrysene)	*111*		*52 - 144*	*11/13/23 00:00*	*11/23/23 10:25*	*1*
(d12-Perylene)	*106*		*36 - 161*	*11/13/23 00:00*	*11/23/23 10:25*	*1*
(d8-Naphthalene)	*120*		*25 - 125*	*11/13/23 00:00*	*11/23/23 10:25*	*1*

Lab Sample ID: 112795-BS1
Matrix: BlankMatrix
Analysis Batch: O-44006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-44006_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.408		µg/L		82	31 - 128
1-Methylphenanthrene	0.5	0.415		µg/L		83	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.325		µg/L		65	55 - 122
2,6-Dimethylnaphthalene	0.5	0.477		µg/L		95	48 - 120
2-Methylnaphthalene	1.5	1.75		µg/L		117	47 - 130
Acenaphthene	1.5	1.5		µg/L		100	53 - 131
Acenaphthylene	1.5	1.63		µg/L		109	43 - 140
Anthracene	1.5	1.82		µg/L		121	58 - 135

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

Lab Sample ID: 112795-BS1
Matrix: BlankMatrix
Analysis Batch: O-44006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-44006_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benz[a]anthracene			3	1.9		µg/L		63	55 - 145		
Benzo[a]pyrene			1.5	1.53		µg/L		102	51 - 143		
Benzo[b]fluoranthene			1.5	1.81		µg/L		121	46 - 165		
Benzo[e]pyrene			0.5	0.534		µg/L		107	42 - 152		
Benzo[g,h,i]perylene			1.5	1.49		µg/L		99	63 - 133		
Benzo[k]fluoranthene			1.5	1.58		µg/L		105	56 - 145		
Biphenyl			1	0.586		µg/L		59	56 - 119		
Chrysene			1.5	1.79		µg/L		119	56 - 141		
Dibenz[a,h]anthracene			1.5	1.45		µg/L		97	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.466		µg/L		93	50 - 150		
Dibenzothiophene			0.5	0.5		µg/L		100	46 - 126		
Disalicylidenepropanediamine			50	44.6		µg/L		89	50 - 150		
Fluoranthene			1.5	1.63		µg/L		109	60 - 146		
Fluorene			3	2.51		µg/L		84	58 - 131		
Indeno[1,2,3-cd]pyrene			1.5	1.49		µg/L		99	50 - 151		
Naphthalene			1.5	1.79		µg/L		119	41 - 126		
Perylene			0.5	0.456		µg/L		91	48 - 141		
Phenanthrene			3	2.17		µg/L		72	67 - 127		
Pyrene			1.5	1.46		µg/L		97	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*81*		*27 - 133*
(d10-Phenanthrene)	*102*		*43 - 129*
(d12-Chrysene)	*105*		*52 - 144*
(d12-Perylene)	*107*		*36 - 161*
(d8-Naphthalene)	*124*		*25 - 125*

Lab Sample ID: 112795-BS2
Matrix: BlankMatrix
Analysis Batch: O-44006

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-44006_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.441		µg/L		88	31 - 128	7	30
1-Methylphenanthrene			0.5	0.412		µg/L		82	66 - 127	1	30
2,3,5-Trimethylnaphthalene			0.5	0.322		µg/L		64	55 - 122	2	30
2,6-Dimethylnaphthalene			0.5	0.498		µg/L		100	48 - 120	5	30
2-Methylnaphthalene			1.5	1.87		µg/L		125	47 - 130	7	30
Acenaphthene			1.5	1.55		µg/L		103	53 - 131	3	30
Acenaphthylene			1.5	1.65		µg/L		110	43 - 140	1	30
Anthracene			1.5	1.55		µg/L		103	58 - 135	16	30
Benz[a]anthracene			3	2.2		µg/L		73	55 - 145	15	30
Benzo[a]pyrene			1.5	1.73		µg/L		115	51 - 143	12	30
Benzo[b]fluoranthene			1.5	2.11		µg/L		141	46 - 165	15	30
Benzo[e]pyrene			0.5	0.583		µg/L		117	42 - 152	9	30
Benzo[g,h,i]perylene			1.5	1.48		µg/L		99	63 - 133	0	30
Benzo[k]fluoranthene			1.5	1.76		µg/L		117	56 - 145	11	30
Biphenyl			1	0.607		µg/L		61	56 - 119	3	30
Chrysene			1.5	2.04		µg/L		136	56 - 141	13	30

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

Lab Sample ID: 112795-BS2
Matrix: BlankMatrix
Analysis Batch: O-44006

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-44006_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dibenz[a,h]anthracene			1.5	1.42		µg/L		95	55 - 150	2	30
Dibenzo[a,l]pyrene			0.5	0.54		µg/L		108	50 - 150	15	30
Dibenzothiophene			0.5	0.527		µg/L		105	46 - 126	5	30
Disalicylidenepropanediamine			50	47.7		µg/L		95	50 - 150	7	30
Fluoranthene			1.5	1.58		µg/L		105	60 - 146	4	30
Fluorene			3	2.45		µg/L		82	58 - 131	2	30
Indeno[1,2,3-cd]pyrene			1.5	1.46		µg/L		97	50 - 151	2	30
Naphthalene			1.5	1.88		µg/L		125	41 - 126	5	30
Perylene			0.5	0.538		µg/L		108	48 - 141	17	30
Phenanthrene			3	2.05		µg/L		68	67 - 127	6	30
Pyrene			1.5	1.52		µg/L		101	54 - 156	4	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*87*		*27 - 133*
(d10-Phenanthrene)	*111*		*43 - 129*
(d12-Chrysene)	*126*		*52 - 144*
(d12-Perylene)	*109*		*36 - 161*
(d8-Naphthalene)	*121*		*25 - 125*

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Lab Sample ID: 23VG39K04B
Matrix: WATER
Analysis Batch: 23VG39K04

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			11/09/23 14:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE					*11/09/23 14:25*	*1*

Lab Sample ID: 23VG39K04L
Matrix: WATER
Analysis Batch: 23VG39K04

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE			0.5	0.473		mg/L		95	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOFLUOROBENZENE	*109*		*70 - 130*

Lab Sample ID: 23K066-01M
Matrix: WATER
Analysis Batch: 23VG39K04

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE	ND		0.5	0.459		mg/L		92	50 - 130

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics (Continued)

Lab Sample ID: 23K066-01M
Matrix: WATER
Analysis Batch: 23VG39K04

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

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
BROMOFLUOROBENZENE	*100*		*60 - 140*

Lab Sample ID: 23K066-01S
Matrix: WATER
Analysis Batch: 23VG39K04

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
GASOLINE	ND		0.5	0.481		mg/L		96	50 - 130	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
BROMOFLUOROBENZENE	*105*		*60 - 140*

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Lab Sample ID: 23DSK012WB
Matrix: WATER
Analysis Batch: 23DSK012W

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			11/21/23 12:45	1
JP5	ND	U	0.05		mg/L			11/21/23 12:45	1
JP8	ND	U	0.05		mg/L			11/21/23 12:45	1
MOTOR OIL	ND	U	0.05		mg/L			11/21/23 12:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE					*11/21/23 12:45*	*1*
HEXACOSANE					*11/21/23 12:45*	*1*

Lab Sample ID: 23DSK012WL
Matrix: WATER
Analysis Batch: 23DSK012W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
DIESEL			2.5	2.22		mg/L		89	50 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOBENZENE	*73*		*60 - 130*
HEXACOSANE	*101*		*60 - 130*

Lab Sample ID: 23J5K012WL
Matrix: WATER
Analysis Batch: 23DSK012W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP5			2.5	1.6		mg/L		64	30 - 160		

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO (Continued)

Lab Sample ID: 23J5K012WL
Matrix: WATER
Analysis Batch: 23DSK012W

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	63		60 - 130
HEXACOSANE	88		60 - 130

Lab Sample ID: 23J8K012WL
Matrix: WATER
Analysis Batch: 23DSK012W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP8			2.5	1.73		mg/L		69	30 - 160		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	80		60 - 130
HEXACOSANE	94		60 - 130

Subcontract

Analysis Batch: O-44006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-70278-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44006_P
380-70278-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44006_P
380-70278-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44006_P
380-70278-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44006_P
112795-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44006_P
112795-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44006_P
112795-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44006_P

Analysis Batch: 23DSK012W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-70278-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
380-70278-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
380-70278-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
380-70278-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
23DSK012WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
23DSK012WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
23J5K012WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
23J8K012WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	

Analysis Batch: 23VG39K04

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-70278-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-70278-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-70278-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-70278-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

Subcontract (Continued)

Analysis Batch: 23VG39K04 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-70278-5	TB MOANALUA WELLS	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-70278-6	TB AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-70278-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-70278-8	TB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39K04B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39K04L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23K066-01M	Matrix Spike	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23K066-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-44006_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-70278-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
380-70278-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
380-70278-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	EPA_625	
380-70278-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	EPA_625	
112795-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
112795-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
112795-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-70278-2

Client Sample ID: MOANALUA WELLS
Lab Sample ID: 380-70278-1
Date Collected: 11/06/23 09:51
Matrix: Drinking Water
Date Received: 11/08/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	EPA_625		1	O-44006_P			11/13/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44006	YC		11/23/23 15:44
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39K04	SCerva		11/10/23 01:33
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSK012W	SDees		11/21/23 14:56

Client Sample ID: AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-70278-2
Date Collected: 11/06/23 10:54
Matrix: Drinking Water
Date Received: 11/08/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	EPA_625		1	O-44006_P			11/13/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44006	YC		11/23/23 17:31
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39K04	SCerva		11/10/23 03:57
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSK012W	SDees		11/21/23 15:15

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-70278-3
Date Collected: 11/06/23 11:22
Matrix: Drinking Water
Date Received: 11/08/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	EPA_625		1	O-44006_P			11/13/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44006	YC		11/23/23 19:17
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39K04	SCerva		11/10/23 04:33
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSK012W	SDees		11/21/23 15:33

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-70278-4
Date Collected: 11/06/23 10:27
Matrix: Drinking Water
Date Received: 11/08/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	EPA_625		1	O-44006_P			11/13/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44006	YC		11/23/23 21:04
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39K04	SCerva		11/10/23 05:09
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSK012W	SDees		11/21/23 15:52

Lab Chronicle

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

Job ID: 380-70278-2

Client Sample ID: TB MOANALUA WELLS
Lab Sample ID: 380-70278-5
Date Collected: 11/06/23 09:51
Matrix: Water
Date Received: 11/08/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39K04	SCerva		11/10/23 05:45

Client Sample ID: TB AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-70278-6
Date Collected: 11/06/23 10:54
Matrix: Water
Date Received: 11/08/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39K04	SCerva		11/10/23 06:21

Client Sample ID: TB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-70278-7
Date Collected: 11/06/23 11:22
Matrix: Water
Date Received: 11/08/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39K04	SCerva		11/10/23 06:57

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-70278-8
Date Collected: 11/06/23 10:27
Matrix: Water
Date Received: 11/08/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39K04	SCerva		11/10/23 07:33

Laboratory References:

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

Method Summary

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

Job ID: 380-70278-2

Method	Method Description	Protocol	Laboratory
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	

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

Sample Summary

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

Job ID: 380-70278-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-70278-1	MOANALUA WELLS	Drinking Water	11/06/23 09:51	11/08/23 10:30
380-70278-2	AIEA GULCH WELLS PUMP 2	Drinking Water	11/06/23 10:54	11/08/23 10:30
380-70278-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	11/06/23 11:22	11/08/23 10:30
380-70278-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	11/06/23 10:27	11/08/23 10:30
380-70278-5	TB MOANALUA WELLS	Water	11/06/23 09:51	11/08/23 10:30
380-70278-6	TB AIEA GULCH WELLS PUMP 2	Water	11/06/23 10:54	11/08/23 10:30
380-70278-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Water	11/06/23 11:22	11/08/23 10:30
380-70278-8	TB HALAWA WELLS UNITS 1 & 2 P1	Water	11/06/23 10:27	11/08/23 10:30

EMAX LABORATORIES, INC.
3051 Fujita Street
Torrance, CA 90505
Tel: (310)-618-8889

Date: 12-06-2023
EMAX Batch No.: 23K066

Attn: Jackie Contreras

Eurofins Eaton Analytical
750 Royal Oaks Dr., Suite 100
Monrovia, CA 91016-3629

Subject: Laboratory Report
Project: 380-70278

Enclosed is the Laboratory report for samples received on 11/09/23.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-70278-1	K066-01	11/06/23	WATER	TPH GASOLINE TPH
380-70278-2	K066-02	11/06/23	WATER	TPH GASOLINE TPH
380-70278-3	K066-03	11/06/23	WATER	TPH GASOLINE TPH
380-70278-4	K066-04	11/06/23	WATER	TPH GASOLINE TPH
380-70278-5	K066-05	11/06/23	WATER	TPH GASOLINE
380-70278-6	K066-06	11/06/23	WATER	TPH GASOLINE
380-70278-7	K066-07	11/06/23	WATER	TPH GASOLINE
380-70278-8	K066-08	11/06/23	WATER	TPH GASOLINE
380-70278-1MS	K066-01M	11/06/23	WATER	TPH GASOLINE
380-70278-1MSD	K066-01S	11/06/23	WATER	TPH GASOLINE

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912023-25
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

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

Chain of Custody Record

23K066

eurofins | Environment Testing

12/12/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-89359.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: EMAX Laboratories Inc		Accreditations Required (See note): State - Hawaii		Job #: 380-70278-1
Address: 3051 Fujita Street, ,	Due Date Requested: 11/20/2023			
City: Torrance	TAT Requested (days):			
State, Zip: CA, 90505				
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 (8015 Gas (Purgeable) LL (EAL))/ 8015 Gas (Purgeable) LL (EAL)	SUB (8015 LL DRO/MRO/JP5/JP8)/ 8015 LL DRO/MRO/JP5/JP8	Total Number of containers	Special Instructions/Note:
				Preservation Code:							
1	MOANALUA WELLS (380-70278-1)	11/6/23	09:51 Hawaiian		Water			X	X	6	See Attached Instructions
2	AIEA GULCH WELLS PUMP 2 (380-70278-2)	11/6/23	10:54 Hawaiian		Water			X	X	6	See Attached Instructions
3	AIEA WELLS PUMPS 1&2 (260) P2 (380-70278-3)	11/6/23	11:22 Hawaiian		Water			X	X	5	See Attached Instructions
4	HALAWA WELLS UNITS 1 & 2 P1 (380-70278-4)	11/6/23	10:27 Hawaiian		Water			X	X	5	See Attached Instructions
5	TB MOANALUA WELLS (380-70278-5)	11/6/23	09:51 Hawaiian		Water			X		2	See Attached Instructions
6	TB AIEA GULCH WELLS PUMP 2 (380-70278-6)	11/6/23	10:54 Hawaiian		Water			X		2	See Attached Instructions
7	TB AIEA WELLS PUMPS 1&2 (260) P2 (380-70278-7)	11/6/23	11:22 Hawaiian		Water			X		2	See Attached Instructions
8	TB HALAWA WELLS UNITS 1 & 2 P1 (380-70278-8)	11/6/23	10:27 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
1	YUDI	11/9/23 11:01	EMAX			
2	RUBEN GARCIA	11 9 23 11 01	DCS			
3	RUBEN GARCIA	11 9 23 12:31	DCS		11/09/23 12:31	EMAX

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.5 | 3.3 ∆CF: -0.2

EMAX LABORATORIES, INC.

REFERENCE: EMAX-SM02 Rev. 12

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 23K066
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient Maria Rivera
☐ EMAX Courier ☒ Client Delivery		Date 11/09/23 Time 12:31

COC INSPECTION

☒ Client Name ☒ Client PM/FC ☐ Sampler Name ☒ Sampling Date/Time ☒ Sample ID ☒ Matrix
☒ Address ☒ Tel # / Fax # ☐ Courier Signature ☒ Analysis Required ☐ Preservative (if any) ☒ TAT
Safety Issues (if any) ☐ High concentrations expected ☐ From Superfund Site ☐ Rad screening required
Note:

PACKAGING INSPECTION

Container ☒ Cooler ☐ Box ☐ Other
Condition *correction factor: -0.2 ☐ Custody Seal ☐ Intact ☐ Damaged
Packaging ☒ Bubble Pack ☐ Styrofoam ☐ Popcorn ☐ Sufficient ☐ _____
Temperatures (Cool, ≤6 °C but not frozen) ☒ Cooler 1 3.5/3.3 °C ☐ Cooler 2 _____ °C ☐ Cooler 3 _____ °C ☐ Cooler 4 _____ °C ☐ Cooler 5 _____ °C
☐ Cooler 6 _____ °C ☐ Cooler 7 _____ °C ☐ Cooler 8 _____ °C ☐ Cooler 9 _____ °C ☐ Cooler 10 _____ °C
Thermometer: A - S/N _____ B - S/N _____ C - S/N 230044897 D - S/N 210700237
Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.
Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-4	5,6,11,12,16,17,21,22	D1	JPS/ JPB not on label	R1
6-8	26,27,30	D22	2nd Date reads: 10/31/23	↓

JSR 11/09

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. RB 11/15/23

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? ☐ YES ☐ NO

LEGEND:

☐ Continue to next page.

Code	Description- Sample Management
(D1)	Analysis is not indicated in label
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
(D22)	2nd Date on label is incorrect
D23	
D24	

Code	Description-Sample Management
R1	Proceed as indicated in ☒ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	
R9	
R10	
R11	
R12	

REVIEWS:
Sample Labeling: Maria Rivera / Jocelyne Solis-Ramos
Date: 11/09/23 / 11/09/23
SRF: Jocelyne Solis-Ramos
Date: 11/09/23
PM: RB
Date: 11/15/23

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-70278

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 23K066

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-70278

SDG : 23K066

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of eight(8) water samples were received on 11/09/23 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VG39K04B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. VG39K04L/VG39K04C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Gasoline was within MS QC limits in K066-01M/K066-01S. Refer to Matrix QC summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL
Project : 380-70278

SDG NO. : 23K066
Instrument ID : GCT039

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VG39K04B	1	NA	11/09/2314:25	11/09/2314:25	EK09005A	EK09003A	23VG39K04	Method Blank
LCS1W	VG39K04L	1	NA	11/09/2315:02	11/09/2315:02	EK09006A	EK09003A	23VG39K04	Lab Control Sample (LCS)
LCD1W	VG39K04C	1	NA	11/09/2315:44	11/09/2315:44	EK09007A	EK09003A	23VG39K04	LCS Duplicate
380-70278-1	K066-01	1	NA	11/10/2301:33	11/10/2301:33	EK09023A	EK09015A	23VG39K04	Field Sample
380-70278-1MS	K066-01M	1	NA	11/10/2302:09	11/10/2302:09	EK09024A	EK09015A	23VG39K04	Matrix Spike Sample (MS)
380-70278-1MSD	K066-01S	1	NA	11/10/2302:45	11/10/2302:45	EK09025A	EK09015A	23VG39K04	MS Duplicate (MSD)
380-70278-2	K066-02	1	NA	11/10/2303:57	11/10/2303:57	EK09027A	EK09026A	23VG39K04	Field Sample
380-70278-3	K066-03	1	NA	11/10/2304:33	11/10/2304:33	EK09028A	EK09026A	23VG39K04	Field Sample
380-70278-4	K066-04	1	NA	11/10/2305:09	11/10/2305:09	EK09029A	EK09026A	23VG39K04	Field Sample
380-70278-5	K066-05	1	NA	11/10/2305:45	11/10/2305:45	EK09030A	EK09026A	23VG39K04	Field Sample
380-70278-6	K066-06	1	NA	11/10/2306:21	11/10/2306:21	EK09031A	EK09026A	23VG39K04	Field Sample
380-70278-7	K066-07	1	NA	11/10/2306:57	11/10/2306:57	EK09032A	EK09026A	23VG39K04	Field Sample
380-70278-8	K066-08	1	NA	11/10/2307:33	11/10/2307:33	EK09033A	EK09026A	23VG39K04	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 09:51
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/10/23 01:33
Sample ID	: 380-70278-1	Date Analyzed:	11/10/23 01:33
Lab Samp ID:	K066-01	Dilution Factor:	1
Lab File ID:	EK09023A	Matrix:	WATER
Ext Btch ID:	23VG39K04	% Moisture:	NA
Calib. Ref.:	EK09015A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0318	0.0400	79	60-140

Notes:

Parameter	H-C Range
Gasoline	C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 5ml	Final Volume	: 5ml
Prepared by	: SCerva	Analyzed by	: SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:54
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/10/23 03:57
Sample ID	: 380-70278-2	Date Analyzed:	11/10/23 03:57
Lab Samp ID:	K066-02	Dilution Factor:	1
Lab File ID:	EK09027A	Matrix:	WATER
Ext Btch ID:	23VG39K04	% Moisture:	NA
Calib. Ref.:	EK09026A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0324	0.0400	81	60-140

Notes:
Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 11:22
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/10/23 04:33
Sample ID	: 380-70278-3	Date Analyzed:	11/10/23 04:33
Lab Samp ID:	K066-03	Dilution Factor:	1
Lab File ID:	EK09028A	Matrix:	WATER
Ext Btch ID:	23VG39K04	% Moisture:	NA
Calib. Ref.:	EK09026A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0325	0.0400	81	60-140

Notes:

Parameter	H-C Range
Gasoline	C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 5ml	Final Volume :	5ml
Prepared by	: SCerva	Analyzed by :	SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:27
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/10/23 05:09
Sample ID	: 380-70278-4	Date Analyzed:	11/10/23 05:09
Lab Samp ID:	K066-04	Dilution Factor:	1
Lab File ID:	EK09029A	Matrix:	WATER
Ext Btch ID:	23VG39K04	% Moisture:	NA
Calib. Ref.:	EK09026A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0321	0.0400	80	60-140

Notes:
Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 09:51
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/10/23 05:45
Sample ID	: 380-70278-5	Date Analyzed:	11/10/23 05:45
Lab Samp ID:	K066-05	Dilution Factor:	1
Lab File ID:	EK09030A	Matrix:	WATER
Ext Btch ID:	23VG39K04	% Moisture:	NA
Calib. Ref.:	EK09026A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0318	0.0400	79	60-140

Notes:

Parameter	H-C Range
Gasoline	C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 5ml	Final Volume	: 5ml
Prepared by	: SCerva	Analyzed by	: SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:54
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/10/23 06:21
Sample ID	: 380-70278-6	Date Analyzed:	11/10/23 06:21
Lab Samp ID:	K066-06	Dilution Factor:	1
Lab File ID:	EK09031A	Matrix:	WATER
Ext Btch ID:	23VG39K04	% Moisture:	NA
Calib. Ref.:	EK09026A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0316	0.0400	79	60-140

Notes:

Parameter	H-C Range
Gasoline	C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 5ml	Final Volume	: 5ml
Prepared by	: SCerva	Analyzed by	: SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 11:22
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/10/23 06:57
Sample ID	: 380-70278-7	Date Analyzed:	11/10/23 06:57
Lab Samp ID:	K066-07	Dilution Factor:	1
Lab File ID:	EK09032A	Matrix:	WATER
Ext Btch ID:	23VG39K04	% Moisture:	NA
Calib. Ref.:	EK09026A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0313	0.0400	78	60-140

Notes:

Parameter	H-C Range
Gasoline	C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 5ml	Final Volume :	5ml
Prepared by	: SCerva	Analyzed by :	SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:27
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/10/23 07:33
Sample ID	: 380-70278-8	Date Analyzed:	11/10/23 07:33
Lab Samp ID:	K066-08	Dilution Factor:	1
Lab File ID:	EK09033A	Matrix:	WATER
Ext Btch ID:	23VG39K04	% Moisture:	NA
Calib. Ref.:	EK09026A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0318	0.0400	80	60-140

Notes:

Parameter	H-C Range
Gasoline	C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 5ml	Final Volume	: 5ml
Prepared by	: SCerva	Analyzed by	: SCerva

QC SUMMARIES

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/09/23 14:25
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/09/23 14:25
Sample ID	: MBLK1W	Date Analyzed:	11/09/23 14:25
Lab Samp ID:	VG39K04B	Dilution Factor:	1
Lab File ID:	EK09005A	Matrix:	WATER
Ext Btch ID:	23VG39K04	% Moisture:	NA
Calib. Ref.:	EK09003A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0308	0.0400	77	60-140

Notes:
Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-70278
BATCH NO. : 23K066
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39K04B	VG39K04L	VG39K04C
LAB FILE ID	: EK09005A	EK09006A	EK09007A
DATE PREPARED	: 11/09/23 14:25	11/09/23 15:02	11/09/23 15:44
DATE ANALYZED	: 11/09/23 14:25	11/09/23 15:02	11/09/23 15:44
PREP BATCH	: 23VG39K04	23VG39K04	23VG39K04
CALIBRATION REF	: EK09003A	EK09003A	EK09003A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.473	95	0.500	0.430	86	10	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0437	109	0.0400	0.0416	104	70-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-70278
BATCH NO. : 23K066
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 380-70278-1	380-70278-1MS	380-70278-1MSD
LAB SAMPLE ID	: K066-01	K066-01M	K066-01S
LAB FILE ID	: EK09023A	EK09024A	EK09025A
DATE PREPARED	: 11/10/23 01:33	11/10/23 02:09	11/10/23 02:45
DATE ANALYZED	: 11/10/23 01:33	11/10/23 02:09	11/10/23 02:45
PREP BATCH	: 23VG39K04	23VG39K04	23VG39K04
CALIBRATION REF	: EK09015A	EK09015A	EK09015A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.459	92	0.500	0.481	96	5	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0398	100	0.0400	0.0418	105	60-140

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-70278

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23K066

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-70278

SDG : 23K066

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(4) water samples were received on 11/09/23 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSK012WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DSK012WL/DSK012WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-70278

SDG : 23K066

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(4) water samples were received on 11/09/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSK012WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. J5K012WL/J5K012WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-70278

SDG : 23K066

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(4) water samples were received on 11/09/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSK012WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. J8K012WL/J8K012WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-70278

SDG NO. : 23K066
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSK012WB	1	NA	11/21/2312:45	11/16/2310:30	LK21009A	LK21003A	23DSK012W	Method Blank
LCS1W	DSK012WL	1	NA	11/21/2313:04	11/16/2310:30	LK21010A	LK21003A	23DSK012W	Lab Control Sample (LCS)
LCD1W	DSK012WC	1	NA	11/21/2313:22	11/16/2310:30	LK21011A	LK21003A	23DSK012W	LCS Duplicate
380-70278-1	K066-01	1	NA	11/21/2314:56	11/16/2310:30	LK21016A	LK21003A	23DSK012W	Field Sample
380-70278-2	K066-02	1	NA	11/21/2315:15	11/16/2310:30	LK21017A	LK21003A	23DSK012W	Field Sample
380-70278-3	K066-03	1	NA	11/21/2315:33	11/16/2310:30	LK21018A	LK21003A	23DSK012W	Field Sample
380-70278-4	K066-04	1	NA	11/21/2315:52	11/16/2310:30	LK21019A	LK21003A	23DSK012W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-70278

SDG NO. : 23K066
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSK012WB	1	NA	11/21/2312:45	11/16/2310:30	LK21009A	LK21004A	23DSK012W	Method Blank
LCS1W	J5K012WL	1	NA	11/21/2313:41	11/16/2310:30	LK21012A	LK21004A	23DSK012W	Lab Control Sample (LCS)
LCD1W	J5K012WC	1	NA	11/21/2314:00	11/16/2310:30	LK21013A	LK21004A	23DSK012W	LCS Duplicate
380-70278-1	K066-01	1	NA	11/21/2314:56	11/16/2310:30	LK21016A	LK21004A	23DSK012W	Field Sample
380-70278-2	K066-02	1	NA	11/21/2315:15	11/16/2310:30	LK21017A	LK21004A	23DSK012W	Field Sample
380-70278-3	K066-03	1	NA	11/21/2315:33	11/16/2310:30	LK21018A	LK21004A	23DSK012W	Field Sample
380-70278-4	K066-04	1	NA	11/21/2315:52	11/16/2310:30	LK21019A	LK21004A	23DSK012W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-70278

SDG NO. : 23K066
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSK012WB	1	NA	11/21/2312:45	11/16/2310:30	LK21009A	LK21005A	23DSK012W	Method Blank
LCS1W	J8K012WL	1	NA	11/21/2314:18	11/16/2310:30	LK21014A	LK21005A	23DSK012W	Lab Control Sample (LCS)
LCD1W	J8K012WC	1	NA	11/21/2314:37	11/16/2310:30	LK21015A	LK21005A	23DSK012W	LCS Duplicate
380-70278-1	K066-01	1	NA	11/21/2314:56	11/16/2310:30	LK21016A	LK21005A	23DSK012W	Field Sample
380-70278-2	K066-02	1	NA	11/21/2315:15	11/16/2310:30	LK21017A	LK21005A	23DSK012W	Field Sample
380-70278-3	K066-03	1	NA	11/21/2315:33	11/16/2310:30	LK21018A	LK21005A	23DSK012W	Field Sample
380-70278-4	K066-04	1	NA	11/21/2315:52	11/16/2310:30	LK21019A	LK21005A	23DSK012W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 09:51
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-1	Date Analyzed:	11/21/23 14:56
Lab Samp ID:	23K066-01	Dilution Factor:	1
Lab File ID:	LK21016A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21003A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.027	0.014
Motor Oil	ND	0.054	0.027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.362	0.540	67	60-130
Hexacosane	0.116	0.135	86	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 930ml
Final Volume : 5ml
Prepared by : ESrama
Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 09:51
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-1	Date Analyzed:	11/21/23 14:56
Lab Samp ID:	23K066-01	Dilution Factor:	1
Lab File ID:	LK21016A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.054	0.027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.362	0.540	67	60-130
Hexacosane	0.116	0.135	86	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP5 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 930ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 09:51
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-1	Date Analyzed:	11/21/23 14:56
Lab Samp ID:	23K066-01	Dilution Factor:	1
Lab File ID:	LK21016A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.054	0.027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.362	0.540	67	60-130
Hexacosane	0.116	0.135	86	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 930ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:54
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-2	Date Analyzed:	11/21/23 15:15
Lab Samp ID:	23K066-02	Dilution Factor:	1
Lab File ID:	LK21017A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21003A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.029	0.014
Motor Oil	ND	0.058	0.029

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.355	0.575	62	60-130
Hexacosane	0.123	0.144	85	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 870ml	Final Volume :	5ml
Prepared by	: ESrama	Analyzed by :	SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:54
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-2	Date Analyzed:	11/21/23 15:15
Lab Samp ID:	23K066-02	Dilution Factor:	1
Lab File ID:	LK21017A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.058	0.029

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.355	0.575	62	60-130
Hexacosane	0.123	0.144	85	60-130

Notes:
RL : Reporting Limit

Parameter	H-C Range
JP5	C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 870ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:54
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-2	Date Analyzed:	11/21/23 15:15
Lab Samp ID:	23K066-02	Dilution Factor:	1
Lab File ID:	LK21017A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.058	0.029	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	0.355	0.575	62	60-130
Hexacosane	0.123	0.144	85	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 870ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 11:22
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-3	Date Analyzed:	11/21/23 15:33
Lab Samp ID:	23K066-03	Dilution Factor:	1
Lab File ID:	LK21018A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21003A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.030	0.015
Motor Oil	ND	0.059	0.030

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.377	0.590	64	60-130
Hexacosane	0.125	0.148	85	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 850ml	Final Volume :	5ml
Prepared by	: ESrama	Analyzed by :	SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 11:22
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-3	Date Analyzed:	11/21/23 15:33
Lab Samp ID:	23K066-03	Dilution Factor:	1
Lab File ID:	LK21018A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.059	0.030

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.377	0.590	64	60-130
Hexacosane	0.125	0.148	85	60-130

Notes:
RL : Reporting Limit

Parameter	H-C Range
JP5	C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 850ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 11:22
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-3	Date Analyzed:	11/21/23 15:33
Lab Samp ID:	23K066-03	Dilution Factor:	1
Lab File ID:	LK21018A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.059	0.030	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	0.377	0.590	64	60-130
Hexacosane	0.125	0.148	85	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 850ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:27
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-4	Date Analyzed:	11/21/23 15:52
Lab Samp ID:	23K066-04	Dilution Factor:	1
Lab File ID:	LK21019A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21003A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.030	0.015
Motor Oil	ND	0.059	0.030

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.375	0.590	64	60-130
Hexacosane	0.130	0.148	88	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 850ml	Final Volume	: 5ml
Prepared by	: ESrama	Analyzed by	: SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:27
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-4	Date Analyzed:	11/21/23 15:52
Lab Samp ID:	23K066-04	Dilution Factor:	1
Lab File ID:	LK21019A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.059	0.030

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.375	0.590	64	60-130
Hexacosane	0.130	0.148	88	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP5 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 850ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/06/23 10:27
Project	: 380-70278	Date Received:	11/09/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: 380-70278-4	Date Analyzed:	11/21/23 15:52
Lab Samp ID:	23K066-04	Dilution Factor:	1
Lab File ID:	LK21019A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.059	0.030

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.375	0.590	64	60-130
Hexacosane	0.130	0.148	88	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 850ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/16/23 10:30
Project	: 380-70278	Date Received:	11/16/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: MBLK1W	Date Analyzed:	11/21/23 12:45
Lab Samp ID:	DSK012WB	Dilution Factor:	1
Lab File ID:	LK21009A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21003A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.025	0.012
Motor Oil	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.350	0.500	70	60-130
Hexacosane	0.111	0.125	89	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume :	5ml
Prepared by	: ESrama	Analyzed by :	SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-70278
BATCH NO. : 23K066
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSK012WB	DSK012WL	DSK012WC
LAB FILE ID	: LK21009A	LK21010A	LK21011A
DATE PREPARED	: 11/16/23 10:30	11/16/23 10:30	11/16/23 10:30
DATE ANALYZED	: 11/21/23 12:45	11/21/23 13:04	11/21/23 13:22
PREP BATCH	: 23DSK012W	23DSK012W	23DSK012W
CALIBRATION REF	: LK21003A	LK21003A	LK21003A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.50	2.22	89	2.50	2.46	98	10	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.365	73	0.500	0.386	77	60-130
Hexacosane	0.125	0.126	101	0.125	0.122	98	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/16/23 10:30
Project	: 380-70278	Date Received:	11/16/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: MBLK1W	Date Analyzed:	11/21/23 12:45
Lab Samp ID:	DSK012WB	Dilution Factor:	1
Lab File ID:	LK21009A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.350	0.500	70	60-130
Hexacosane	0.111	0.125	89	60-130

Notes:
RL : Reporting Limit

Parameter	H-C Range
JP5	C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 1000ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-70278
BATCH NO. : 23K066
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSK012WB	J5K012WL	J5K012WC
LAB FILE ID	: LK21009A	LK21012A	LK21013A
DATE PREPARED	: 11/16/23 10:30	11/16/23 10:30	11/16/23 10:30
DATE ANALYZED	: 11/21/23 12:45	11/21/23 13:41	11/21/23 14:00
PREP BATCH	: 23DSK012W	23DSK012W	23DSK012W
CALIBRATION REF	: LK21004A	LK21004A	LK21004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.50	1.60	64	2.50	1.88	75	16	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.316	63	0.500	0.385	77	60-130
Hexacosane	0.125	0.110	88	0.125	0.116	93	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/16/23 10:30
Project	: 380-70278	Date Received:	11/16/23
Batch No.	: 23K066	Date Extracted:	11/16/23 10:30
Sample ID	: MBLK1W	Date Analyzed:	11/21/23 12:45
Lab Samp ID:	DSK012WB	Dilution Factor:	1
Lab File ID:	LK21009A	Matrix:	WATER
Ext Btch ID:	23DSK012W	% Moisture:	NA
Calib. Ref.:	LK21005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.350	0.500	70	60-130
Hexacosane	0.111	0.125	89	60-130

Notes:
RL : Reporting Limit

Parameter	H-C Range
JP8	C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 1000ml Final Volume : 5ml
Prepared by : ESrama Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-70278
BATCH NO. : 23K066
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSK012WB	J8K012WL	J8K012WC
LAB FILE ID	: LK21009A	LK21014A	LK21015A
DATE PREPARED	: 11/16/23 10:30	11/16/23 10:30	11/16/23 10:30
DATE ANALYZED	: 11/21/23 12:45	11/21/23 14:18	11/21/23 14:37
PREP BATCH	: 23DSK012W	23DSK012W	23DSK012W
CALIBRATION REF	: LK21005A	LK21005A	LK21005A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.50	1.73	69	2.50	1.95	78	12	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.399	80	0.500	0.431	86	60-130
Hexacosane	0.125	0.118	94	0.125	0.117	94	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

November 27, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-70278-1
Physis Project ID: 1407003-460

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 11/9/2023. 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,
misty mercier

Misty Mercier
714 602-5320
Extension 202
mistymercier@physislabs.com

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-460

RED-HILL Project # 38001111 Job # 380-70278-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
112796	MOANALUA WELLS	380-70278-1	11/6/2023	9:51	Samplewater	Not Specified
112797	AIEA GULCH WELLS PUMP 2	380-70278-2	11/6/2023	10:54	Samplewater	Not Specified
112798	AIEA WELLS PUMPS 1&2 (260)	380-70278-3	11/6/2023	11:22	Samplewater	Not Specified
112799	HALAWA WELLS UNITS 1 & 2 P1	380-70278-4	11/6/2023	10:27	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: 1407003-460
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-70278-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 112796-R1	**MOANALUA WELLS 380-70278-1**	**Matrix:**	**Samplewater**				**Sampled:**	**06-Nov-23 9:51**		**Received:**	**09-Nov-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44006	13-Nov-23	23-Nov-23
Sample ID: 112797-R1	**AIEA GULCH WELLS PUMP 2 380-7**	**Matrix:**	**Samplewater**				**Sampled:**	**06-Nov-23 10:54**		**Received:**	**09-Nov-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44006	13-Nov-23	23-Nov-23
Sample ID: 112798-R1	**AIEA WELLS PUMPS 1&2 (260) 380-**	**Matrix:**	**Samplewater**				**Sampled:**	**06-Nov-23 11:22**		**Received:**	**09-Nov-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44006	13-Nov-23	23-Nov-23
Sample ID: 112799-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**	**Matrix:**	**Samplewater**				**Sampled:**	**06-Nov-23 10:27**		**Received:**	**09-Nov-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44006	13-Nov-23	23-Nov-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 112796-R1	**MOANALUA WELLS 380-70278-1**	**Matrix: Samplewater**					**Sampled: 06-Nov-23 9:51**			**Received: 09-Nov-23**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	75	1			Total		O-44006	13-Nov-23	23-Nov-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	75	1			Total		O-44006	13-Nov-23	23-Nov-23
(d12-Chrysene)	EPA 625.1	% Recovery	93	1			Total		O-44006	13-Nov-23	23-Nov-23
(d12-Perylene)	EPA 625.1	% Recovery	101	1			Total		O-44006	13-Nov-23	23-Nov-23
(d8-Naphthalene)	EPA 625.1	% Recovery	105	1			Total		O-44006	13-Nov-23	23-Nov-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23

PHYSIS Project ID: 1407003-460
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-70278-1

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-44006	13-Nov-23	23-Nov-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 112797-R1	**AIEA GULCH WELLS PUMP 2 380-7**	**Matrix: Samplewater**					**Sampled: 06-Nov-23 10:54**			**Received: 09-Nov-23**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	69	1			Total		O-44006	13-Nov-23	23-Nov-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	60	1			Total		O-44006	13-Nov-23	23-Nov-23
(d12-Chrysene)	EPA 625.1	% Recovery	96	1			Total		O-44006	13-Nov-23	23-Nov-23
(d12-Perylene)	EPA 625.1	% Recovery	104	1			Total		O-44006	13-Nov-23	23-Nov-23
(d8-Naphthalene)	EPA 625.1	% Recovery	98	1			Total		O-44006	13-Nov-23	23-Nov-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-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-44006	13-Nov-23	23-Nov-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 112798-R1	**AIEA WELLS PUMPS 1&2 (260) 380-**	**Matrix: Samplewater**					**Sampled: 06-Nov-23 11:22**			**Received: 09-Nov-23**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	45	1			Total		O-44006	13-Nov-23	23-Nov-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	53	1			Total		O-44006	13-Nov-23	23-Nov-23
(d12-Chrysene)	EPA 625.1	% Recovery	128	1			Total		O-44006	13-Nov-23	23-Nov-23
(d12-Perylene)	EPA 625.1	% Recovery	102	1			Total		O-44006	13-Nov-23	23-Nov-23
(d8-Naphthalene)	EPA 625.1	% Recovery	120	1			Total		O-44006	13-Nov-23	23-Nov-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-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-44006	13-Nov-23	23-Nov-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 112799-R1	**HALAWA WELLS UNITS 1 & 2 P1 38**	**Matrix: Samplewater**					**Sampled: 06-Nov-23 10:27**			**Received: 09-Nov-23**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	66	1			Total		O-44006	13-Nov-23	23-Nov-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	52	1			Total		O-44006	13-Nov-23	23-Nov-23
(d12-Chrysene)	EPA 625.1	% Recovery	97	1			Total		O-44006	13-Nov-23	23-Nov-23
(d12-Perylene)	EPA 625.1	% Recovery	106	1			Total		O-44006	13-Nov-23	23-Nov-23
(d8-Naphthalene)	EPA 625.1	% Recovery	119	1			Total		O-44006	13-Nov-23	23-Nov-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-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-44006	13-Nov-23	23-Nov-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44006	13-Nov-23	23-Nov-23

QUALITY CONTROL REPORT

PHYSIS Project ID: 1407003-460
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-70278-1

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: 112795-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
	Method: EPA 625.1					Batch ID: O-44006		Prepared: 13-Nov-23			Analyzed: 23-Nov-23			
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 112795-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
	Method: EPA 625.1					Batch ID: O-44006		Prepared: 13-Nov-23			Analyzed: 23-Nov-23			
Disalicylidenepropanediamin	Total	44.6	1	0.05	0.1	µg/L	50	0	89	50 - 150%	PASS			
Sample ID: 112795-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
	Method: EPA 625.1					Batch ID: O-44006		Prepared: 13-Nov-23			Analyzed: 23-Nov-23			
Disalicylidenepropanediamin	Total	47.7	1	0.05	0.1	µg/L	50	0	95	50 - 150%	PASS	7	30	PASS

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 112795-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-44006		Prepared: 13-Nov-23		Analyzed: 23-Nov-23			
(d10-Acenaphthene)	Total	122	1			% Recovery	100	122	27 - 133%	PASS			
(d10-Phenanthrene)	Total	117	1			% Recovery	100	117	43 - 129%	PASS			
(d12-Chrysene)	Total	111	1			% Recovery	100	111	52 - 144%	PASS			
(d12-Perylene)	Total	106	1			% Recovery	100	106	36 - 161%	PASS			
(d8-Naphthalene)	Total	120	1			% Recovery	100	120	25 - 125%	PASS			
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L							
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L							
Anthracene	Total	ND	1	0.001	0.005	µg/L							
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L							
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L							
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Biphenyl	Total	ND	1	0.001	0.005	µg/L							
Chrysene	Total	ND	1	0.001	0.005	µg/L							
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L							
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L							
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L							

PHYSIS Project ID: 1407003-460
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-70278-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

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

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 112795-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
	Method: EPA 625.1					Batch ID: O-44006		Prepared: 13-Nov-23				Analyzed: 23-Nov-23	
(d10-Acenaphthene)	Total	81	1			% Recovery	100	0	81	27 - 133%	PASS		
(d10-Phenanthrene)	Total	102	1			% Recovery	100	0	102	43 - 129%	PASS		
(d12-Chrysene)	Total	105	1			% Recovery	100	0	105	52 - 144%	PASS		
(d12-Perylene)	Total	107	1			% Recovery	100	0	107	36 - 161%	PASS		
(d8-Naphthalene)	Total	124	1			% Recovery	100	0	124	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.408	1	0.001	0.005	µg/L	0.5	0	82	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.415	1	0.001	0.005	µg/L	0.5	0	83	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.325	1	0.001	0.005	µg/L	0.5	0	65	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.477	1	0.001	0.005	µg/L	0.5	0	95	48 - 120%	PASS		
2-Methylnaphthalene	Total	1.75	1	0.001	0.005	µg/L	1.5	0	117	47 - 130%	PASS		
Acenaphthene	Total	1.5	1	0.001	0.005	µg/L	1.5	0	100	53 - 131%	PASS		
Acenaphthylene	Total	1.63	1	0.001	0.005	µg/L	1.5	0	109	43 - 140%	PASS		
Anthracene	Total	1.82	1	0.001	0.005	µg/L	1.5	0	121	58 - 135%	PASS		
Benz[a]anthracene	Total	1.9	1	0.001	0.005	µg/L	3	0	63	55 - 145%	PASS		
Benzo[a]pyrene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	1.81	1	0.001	0.005	µg/L	1.5	0	121	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.534	1	0.001	0.005	µg/L	0.5	0	107	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	1.49	1	0.001	0.005	µg/L	1.5	0	99	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	56 - 145%	PASS		
Biphenyl	Total	0.586	1	0.001	0.005	µg/L	1	0	59	56 - 119%	PASS		
Chrysene	Total	1.79	1	0.001	0.005	µg/L	1.5	0	119	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	1.45	1	0.001	0.005	µg/L	1.5	0	97	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.466	1	0.001	0.005	µg/L	0.5	0	93	50 - 150%	PASS		
Dibenzothiophene	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	46 - 126%	PASS		

PHYSIS Project ID: 1407003-460
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-70278-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Fluoranthene	Total	1.63	1	0.001	0.005	µg/L	1.5	0	109	60 - 146%	PASS			
Fluorene	Total	2.51	1	0.001	0.005	µg/L	3	0	84	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	1.49	1	0.001	0.005	µg/L	1.5	0	99	50 - 151%	PASS			
Naphthalene	Total	1.79	1	0.001	0.005	µg/L	1.5	0	119	41 - 126%	PASS			
Perylene	Total	0.456	1	0.001	0.005	µg/L	0.5	0	91	48 - 141%	PASS			
Phenanthrene	Total	2.17	1	0.001	0.005	µg/L	3	0	72	67 - 127%	PASS			
Pyrene	Total	1.46	1	0.001	0.005	µg/L	1.5	0	97	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Sample ID: 112795-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**		
		Method: EPA 625.1				Batch ID: O-44006		Prepared: 13-Nov-23					Analyzed: 23-Nov-23		
(d10-Acenaphthene)	Total	87	1			% Recovery	100	0	87	27 - 133%	PASS	7	30	PASS	
(d10-Phenanthrene)	Total	111	1			% Recovery	100	0	111	43 - 129%	PASS	8	30	PASS	
(d12-Chrysene)	Total	126	1			% Recovery	100	0	126	52 - 144%	PASS	18	30	PASS	
(d12-Perylene)	Total	109	1			% Recovery	100	0	109	36 - 161%	PASS	2	30	PASS	
(d8-Naphthalene)	Total	121	1			% Recovery	100	0	121	25 - 125%	PASS	2	30	PASS	
1-Methylnaphthalene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	31 - 128%	PASS	7	30	PASS	
1-Methylphenanthrene	Total	0.412	1	0.001	0.005	µg/L	0.5	0	82	66 - 127%	PASS	1	30	PASS	
2,3,5-Trimethylnaphthalene	Total	0.322	1	0.001	0.005	µg/L	0.5	0	64	55 - 122%	PASS	2	30	PASS	
2,6-Dimethylnaphthalene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	48 - 120%	PASS	5	30	PASS	
2-Methylnaphthalene	Total	1.87	1	0.001	0.005	µg/L	1.5	0	125	47 - 130%	PASS	7	30	PASS	
Acenaphthene	Total	1.55	1	0.001	0.005	µg/L	1.5	0	103	53 - 131%	PASS	3	30	PASS	
Acenaphthylene	Total	1.65	1	0.001	0.005	µg/L	1.5	0	110	43 - 140%	PASS	1	30	PASS	
Anthracene	Total	1.55	1	0.001	0.005	µg/L	1.5	0	103	58 - 135%	PASS	16	30	PASS	
Benz[a]anthracene	Total	2.2	1	0.001	0.005	µg/L	3	0	73	55 - 145%	PASS	15	30	PASS	
Benzo[a]pyrene	Total	1.73	1	0.001	0.005	µg/L	1.5	0	115	51 - 143%	PASS	12	30	PASS	
Benzo[b]fluoranthene	Total	2.11	1	0.001	0.005	µg/L	1.5	0	141	46 - 165%	PASS	15	30	PASS	
Benzo[e]pyrene	Total	0.583	1	0.001	0.005	µg/L	0.5	0	117	42 - 152%	PASS	9	30	PASS	
Benzo[g,h,i]perylene	Total	1.48	1	0.001	0.005	µg/L	1.5	0	99	63 - 133%	PASS	0	30	PASS	
Benzo[k]fluoranthene	Total	1.76	1	0.001	0.005	µg/L	1.5	0	117	56 - 145%	PASS	11	30	PASS	
Biphenyl	Total	0.607	1	0.001	0.005	µg/L	1	0	61	56 - 119%	PASS	3	30	PASS	
Chrysene	Total	2.04	1	0.001	0.005	µg/L	1.5	0	136	56 - 141%	PASS	13	30	PASS	
Dibenz[a,h]anthracene	Total	1.42	1	0.001	0.005	µg/L	1.5	0	95	55 - 150%	PASS	2	30	PASS	
Dibenzo[a,l]pyrene	Total	0.54	1	0.001	0.005	µg/L	0.5	0	108	50 - 150%	PASS	15	30	PASS	
Dibenzothiophene	Total	0.527	1	0.001	0.005	µg/L	0.5	0	105	46 - 126%	PASS	5	30	PASS	

PHYSIS Project ID: 1407003-460
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-70278-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Fluoranthene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	60 - 146%	PASS	4	30	PASS	
Fluorene	Total	2.45	1	0.001	0.005	µg/L	3	0	82	58 - 131%	PASS	2	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	1.46	1	0.001	0.005	µg/L	1.5	0	97	50 - 151%	PASS	2	30	PASS	
Naphthalene	Total	1.88	1	0.001	0.005	µg/L	1.5	0	125	41 - 126%	PASS	5	30	PASS	
Perylene	Total	0.538	1	0.001	0.005	µg/L	0.5	0	108	48 - 141%	PASS	17	30	PASS	
Phenanthrene	Total	2.05	1	0.001	0.005	µg/L	3	0	68	67 - 127%	PASS	6	30	PASS	
Pyrene	Total	1.52	1	0.001	0.005	µg/L	1.5	0	101	54 - 156%	PASS	4	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 112796

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.1685	0.3351	1111	Anthracene-D10-	1719-06-8	82
10.9754	0.5479	1817	2,4-Hexadien-1-ol	111-28-4	84
10.9753	0.5387	1787	Furan, 2,5-dihydro-2,5-dimethyl-	59242-27-2	84
11.1381	0.2931	972	4H-Imidazol-4-one, 2-amino-1,5-dihydro-	503-86-6	84
10.7399	0.1083	359	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	86
10.7421	0.0765	254	m-Menthane, (1S,3S)-(+)-	13837-67-7	85
10.6824	0.0333	111	1-Butanol, 2-ethyl-	97-95-0	91

Concentration estimated using the response for Anthracene-d1C

Sample ID: 112797

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.1518	0.3735	1111	Anthracene-D10-	1719-06-8	86
10.9740	0.6428	1912	Furan, 2,5-dihydro-2,5-dimethyl-	59242-27-2	84
10.2866	0.1977	588	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	84
10.3360	0.0952	283	2-Buten-1-ol	6117-91-5	80

Concentration estimated using the response for Anthracene-d1C

Sample ID: 112798

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.1336	0.4093	1111	Anthracene-D10-	1517-22-2	84
59.9514	1.1017	2991	Oxybis(propane-1,2-diyl) dibenzoate	94-03-1	91
10.9725	0.7070	1919	Cyclohexane, nitro-	1122-60-7	88
59.6394	0.6166	1674	Oxybis(propane-1,2-diyl) dibenzoate	94-03-1	92
10.2904	0.2740	744	6,6-Dimethyl-1,3-heptadien-5-ol	81912-03-0	84
10.2911	0.2409	654	Cyclopentanone, 2-(1-methylpropyl)-	6376-92-7	83
10.7447	0.1957	531	3-Isopropyl-4-methyl-1-pentyn-3-ol	5333-87-9	85
60.7281	0.1432	389	Oxybis(propane-1,2-diyl) dibenzoate	94-03-1	93
10.6810	0.0642	174	Octane, 3-methyl-6-methylene-	74630-07-2	80
59.9234	0.0475	129	Difluoromethane	75-10-5	84

Concentration estimated using the response for Anthracene-d1C

Sample ID: 112799

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.1336	0.3559	1111	Anthracene-D10-	1517-22-2	80
10.9691	0.9457	2952	Furan, 2,5-dihydro-2,5-dimethyl-	59242-27-2	84
10.7386	0.2734	853	Cyclohexane, 1-bromo-2-methyl-	6294-39-9	85
10.2864	0.2469	771	Cyclopentanone, 2-(1-methylpropyl)-	6376-92-7	82
10.3341	0.2426	757	2-Nitro-2-ethyl-1,3-propanediol	597-09-1	81
11.3611	0.0320	100	Cyclobutanecarboxylic acid, 4-nitrophenyl ester	1000307-44-2	81

Concentration estimated using the response for Anthracene-d1C

Sample ID: Lab Blank B1_44006

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.1685	0.3351	1111	Anthracene-D10-	1719-06-8	82
10.9754	0.5479	1817	2,4-Hexadien-1-ol	111-28-4	84
10.9753	0.5387	1787	Furan, 2,5-dihydro-2,5-dimethyl-	59242-27-2	84
11.1381	0.2931	972	4H-Imidazol-4-one, 2-amino-1,5-dihydro-	503-86-6	84
10.7399	0.1083	359	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	86
10.7421	0.0765	254	m-Menthane, (1S,3S)-(+)-	13837-67-7	85
10.6824	0.0333	111	1-Butanol, 2-ethyl-	97-95-0	91

Concentration estimated using the response for Anthracene-d1C

CHAIN OF CUSTODY

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	6-Nov-2023	0951	G	Water			2		2	2	4				
AIEA GULCH WELLS PUMP2	6-Nov-2023	1054	G	Water			2		2	2	4				
AIEA WELLS PUMPS 1&2 (260) P2	6-Nov-2023	1122	G	Water			2		2	2	(4)				1 OUT OF 4 ARRIVED BROKEN -OR 11/08/2023
HALAWA WELLS UNITS 1&2 P1	6-Nov-2023	1027	G	Water			2		2	2	(4)				1 OUT OF 4 ARRIVED BROKEN -OR 11/08/2023
TB MOANALUA WELLS	6-Nov-2023	0951		Water							2				
TB AIEA GULCH WELLS PUMP2	6-Nov-2023	1054		Water							2				
TB AIEA WELLS PUMPS 1&2 (260)	6-Nov-2023	1122		Water							2				
TB HALAWA WELLS UNITS 1&2	6-Nov-2023	1027		Water							2				

380-70278 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) 7740 2489 2906 (2) 7740 2489 ~~2880~~ 2917 CR

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: FEDEX (3) 7740 2489 2928

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
BAILEY	07NOV.2023 1400	HBWS	G REITNER	11/08/2023 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: 751A (1) 1.7°-0.1°=1.6° (2) 1.3° @.1°-1.2° (3) 2.1° @ 1°-2.1° 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	6-Nov-2023	0951	G	Water								3	3		
AIEA GULCH WELLS PUMP2	6-Nov-2023	1054	G	Water								3	3		
AIEA WELLS PUMPS 1&2 (260) P2	6-Nov-2023	1122	G	Water								3	3		
HALAWA WELLS UNITS 1&2 P1	6-Nov-2023	1027	G	Water								3	3		
FB MOANALUA WELLS	6-Nov-2023	0951		Water								1	1		
FB AIEA GULCH WELLS PUMP2	6-Nov-2023	1054		Water								1	1		
FB AIEA WELLS PUMPS 1&2 (260)	6-Nov-2023	1122		Water								1	1		
FB HALAWA WELLS UNITS 1&2	6-Nov-2023	1027		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 7740 2489 2906 ② 7740 2489 ~~2880~~ 2917 GR

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: FED EX ③ 7740 2489 2928

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
BAILEY	01 NOV. 2023 1400	HBWS	G REITNER	11/08/2023 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: ∧ Yes Δ No | Custody Seal No:

Cooler Temperature(s) °C and Other Remarks: ① 3.5 IA ① 1.7°-0.1°-1.6° ② 1.3°-0.1°-1.2° ③ 2.1°-0.1°-2.0° GEL-FROZEN

Ver: 01/16/2019

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12/12/2023

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-70278-2

Login Number: 70278
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	