



ANALYTICAL REPORT

PREPARED FOR

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Generated 11/22/2023 8:16:26 AM

JOB DESCRIPTION

RED-HILL

JOB NUMBER

380-61968-2

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization



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Definitions/Glossary

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

Job ID: 380-61968-2

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.
α	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: 380-61968-2

Job ID: 380-61968-2

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-61968-2

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 9/7/2023 10:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.9°C and 2.4°C

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: 380-61968-2

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

Lab Sample ID: 380-61968-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61968-2

No Detections.

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

Lab Sample ID: 380-61968-5

No Detections.

Client Sample ID: TB:AIEA GULCH WELLS P2

Lab Sample ID: 380-61968-6

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-61968-2

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

Lab Sample ID: 380-61968-1

Date Collected: 09/05/23 11:13

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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		09/12/23 00:00	10/15/23 02:53	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Acenaphthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Anthracene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Biphenyl	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Chrysene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/12/23 00:00	10/15/23 02:53	1
Fluoranthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Fluorene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Naphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Perylene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Phenanthrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1
Pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 02:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	78		27 - 133	09/12/23 00:00	10/15/23 02:53	1
(d10-Phenanthrene)	84		43 - 129	09/12/23 00:00	10/15/23 02:53	1
(d12-Chrysene)	90		52 - 144	09/12/23 00:00	10/15/23 02:53	1
(d12-Perylene)	83		36 - 161	09/12/23 00:00	10/15/23 02:53	1
(d8-Naphthalene)	74		25 - 125	09/12/23 00:00	10/15/23 02:53	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			09/11/23 14:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	80		60 - 140		09/11/23 14:27	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	0.026		mg/L			09/20/23 18:48	1
JP5	ND	U	0.052		mg/L			09/20/23 18:48	1
JP8	ND	U	0.052		mg/L			09/20/23 18:48	1
MOTOR OIL	ND	U	0.052		mg/L			09/20/23 18:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	68		60 - 130		09/20/23 18:48	1

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Client Sample Results

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

Job ID: 380-61968-2

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

Lab Sample ID: 380-61968-1

Date Collected: 09/05/23 11:13

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
HEXACOSANE	98		60 - 130		09/20/23 18:48	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61968-2

Date Collected: 09/05/23 10:27

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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		09/12/23 00:00	10/15/23 04:40	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Acenaphthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Anthracene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Biphenyl	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Chrysene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/12/23 00:00	10/15/23 04:40	1
Fluoranthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Fluorene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Naphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Perylene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Phenanthrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1
Pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/15/23 04:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	65		27 - 133	09/12/23 00:00	10/15/23 04:40	1
(d10-Phenanthrene)	71		43 - 129	09/12/23 00:00	10/15/23 04:40	1
(d12-Chrysene)	82		52 - 144	09/12/23 00:00	10/15/23 04:40	1
(d12-Perylene)	83		36 - 161	09/12/23 00:00	10/15/23 04:40	1
(d8-Naphthalene)	59		25 - 125	09/12/23 00:00	10/15/23 04:40	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			09/11/23 16:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	78		60 - 140		09/11/23 16:19	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-61968-2

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61968-2

Date Collected: 09/05/23 10:27

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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			09/16/23 06:12	1
JP5	ND	U	0.053		mg/L			09/16/23 06:12	1
JP8	ND	U	0.053		mg/L			09/16/23 06:12	1
MOTOR OIL	ND	U	0.053		mg/L			09/16/23 06:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOBENZENE	76		60 - 130					09/16/23 06:12	1
HEXACOSANE	91		60 - 130					09/16/23 06:12	1

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

Lab Sample ID: 380-61968-5

Date Collected: 09/05/23 11:13

Matrix: Water

Date Received: 09/07/23 10:40

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			09/11/23 16:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	78		60 - 140					09/11/23 16:56	1

Client Sample ID: TB:AIEA GULCH WELLS P2

Lab Sample ID: 380-61968-6

Date Collected: 09/05/23 10:27

Matrix: Water

Date Received: 09/07/23 10:40

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			09/11/23 17:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	79		60 - 140					09/11/23 17:33	1

Surrogate Summary

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

Job ID: 380-61968-2

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

Matrix: BlankMatrix

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
110863-B1	Method Blank	85	89	88	85	94
110863-BS1	Lab Control Sample	89	96	93	83	90
110863-BS2	Lab Control Sample Dup	89	95	93	82	90

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-61968-1	AIEA WELLS PUMPS 1&2 (260)	78	84	90	74	83
380-61968-2	AIEA GULCH WELLS PUMP 2	65	71	82	59	83

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-61968-1	AIEA WELLS PUMPS 1&2 (260)	80
380-61968-2	AIEA GULCH WELLS PUMP 2	78

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (70-130)
23VG39107C	LCD	104
23VG39107L	Lab Control Sample	105

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-61968-2

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-61968-5	TB: AIEA WELLS PUMPS 1&2 (78
380-61968-6	TB:AIEA GULCH WELLS P2	79

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)

Lab Sample ID	Client Sample ID	BFB (60-140)
231050-01M	Matrix Spike	106
231050-01S	Matrix Spike Duplicate	107

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)

Lab Sample ID	Client Sample ID	BFB
23VG39107B	Method Blank	

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)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
380-61968-1	AIEA WELLS PUMPS 1&2 (260)	68	98
380-61968-2	AIEA GULCH WELLS PUMP 2	76	91

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)

Lab Sample ID	Client Sample ID	BB	XACOSAI
23DSI023WB	Method Blank		

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Surrogate Summary

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

Job ID: 380-61968-2

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB (60-130)	HEXACOSANE (60-130)
23DSI023WC	LCD	78	87
23DSI023WL	Lab Control Sample	80	98
23J5I023WC	LCD	77	82
23J5I023WL	Lab Control Sample	73	92
23J8I023WC	LCD	78	83
23J8I023WL	Lab Control Sample	81	89

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

QC Sample Results

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

Job ID: 380-61968-2

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

Lab Sample ID: 110863-B1
Matrix: BlankMatrix
Analysis Batch: O-42086

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-42086_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Acenaphthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Anthracene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Biphenyl	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Chrysene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/12/23 00:00	10/14/23 18:01	1
Fluoranthene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Fluorene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Naphthalene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Perylene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Phenanthrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Pyrene	ND		0.005	0.001	µg/L		09/12/23 00:00	10/14/23 18:01	1
Surrogate	Blank %Recovery	Blank Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	85		27 - 133				09/12/23 00:00	10/14/23 18:01	1
(d10-Phenanthrene)	89		43 - 129				09/12/23 00:00	10/14/23 18:01	1
(d12-Chrysene)	88		52 - 144				09/12/23 00:00	10/14/23 18:01	1
(d12-Perylene)	94		36 - 161				09/12/23 00:00	10/14/23 18:01	1
(d8-Naphthalene)	85		25 - 125				09/12/23 00:00	10/14/23 18:01	1

Lab Sample ID: 110863-BS1
Matrix: BlankMatrix
Analysis Batch: O-42086

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-42086_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.447		µg/L		89	31 - 128
1-Methylphenanthrene	0.5	0.45		µg/L		90	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.446		µg/L		89	55 - 122
2,6-Dimethylnaphthalene	0.5	0.442		µg/L		88	48 - 120
2-Methylnaphthalene	0.5	0.427		µg/L		85	47 - 130
Acenaphthene	0.5	0.45		µg/L		90	53 - 131
Acenaphthylene	0.5	0.458		µg/L		92	43 - 140
Anthracene	0.5	0.456		µg/L		91	58 - 135

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61968-2

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

Lab Sample ID: 110863-BS1
Matrix: BlankMatrix
Analysis Batch: O-42086

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-42086_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benz[a]anthracene	0.5	0.531		µg/L		106	55 - 145
Benzo[a]pyrene	0.5	0.467		µg/L		93	51 - 143
Benzo[b]fluoranthene	0.5	0.516		µg/L		103	46 - 165
Benzo[e]pyrene	0.5	0.422		µg/L		84	42 - 152
Benzo[g,h,i]perylene	0.5	0.473		µg/L		95	63 - 133
Benzo[k]fluoranthene	0.5	0.46		µg/L		92	56 - 145
Biphenyl	0.5	0.452		µg/L		90	56 - 119
Chrysene	0.5	0.394		µg/L		79	56 - 141
Dibenz[a,h]anthracene	0.5	0.531		µg/L		106	55 - 150
Dibenzo[a,l]pyrene	0.5	0.29		µg/L		58	50 - 150
Dibenzothiophene	0.5	0.468		µg/L		94	46 - 126
Disalicylidenepropanediamine	50	43.5		µg/L		87	50 - 150
Fluoranthene	0.5	0.454		µg/L		91	60 - 146
Fluorene	0.5	0.451		µg/L		90	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.505		µg/L		101	50 - 151
Naphthalene	0.5	0.42		µg/L		84	41 - 126
Perylene	0.5	0.487		µg/L		97	48 - 141
Phenanthrene	0.5	0.461		µg/L		92	67 - 127
Pyrene	0.5	0.447		µg/L		89	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	89		27 - 133
(d10-Phenanthrene)	96		43 - 129
(d12-Chrysene)	93		52 - 144
(d12-Perylene)	90		36 - 161
(d8-Naphthalene)	83		25 - 125

Lab Sample ID: 110863-BS2
Matrix: BlankMatrix
Analysis Batch: O-42086

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-42086_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.408		µg/L		82	31 - 128	8	30
1-Methylphenanthrene	0.5	0.442		µg/L		88	66 - 127	2	30
2,3,5-Trimethylnaphthalene	0.5	0.441		µg/L		88	55 - 122	1	30
2,6-Dimethylnaphthalene	0.5	0.431		µg/L		86	48 - 120	2	30
2-Methylnaphthalene	0.5	0.417		µg/L		83	47 - 130	2	30
Acenaphthene	0.5	0.435		µg/L		87	53 - 131	3	30
Acenaphthylene	0.5	0.429		µg/L		86	43 - 140	7	30
Anthracene	0.5	0.437		µg/L		87	58 - 135	4	30
Benz[a]anthracene	0.5	0.529		µg/L		106	55 - 145	0	30
Benzo[a]pyrene	0.5	0.479		µg/L		96	51 - 143	3	30
Benzo[b]fluoranthene	0.5	0.517		µg/L		103	46 - 165	0	30
Benzo[e]pyrene	0.5	0.416		µg/L		83	42 - 152	1	30
Benzo[g,h,i]perylene	0.5	0.469		µg/L		94	63 - 133	1	30
Benzo[k]fluoranthene	0.5	0.453		µg/L		91	56 - 145	1	30
Biphenyl	0.5	0.443		µg/L		89	56 - 119	1	30
Chrysene	0.5	0.39		µg/L		78	56 - 141	1	30

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QC Sample Results

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

Job ID: 380-61968-2

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

Lab Sample ID: 110863-BS2
Matrix: BlankMatrix
Analysis Batch: O-42086

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-42086_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dibenz[a,h]anthracene	0.5	0.53		µg/L		106	55 - 150	0	30
Dibenzo[a,i]pyrene	0.5	0.298		µg/L		60	50 - 150	3	30
Dibenzothiophene	0.5	0.449		µg/L		90	46 - 126	4	30
Disalicylidenepropanediamine	50	47.6		µg/L		95	50 - 150	9	30
Fluoranthene	0.5	0.443		µg/L		89	60 - 146	2	30
Fluorene	0.5	0.444		µg/L		89	58 - 131	1	30
Indeno[1,2,3-cd]pyrene	0.5	0.501		µg/L		100	50 - 151	1	30
Naphthalene	0.5	0.412		µg/L		82	41 - 126	2	30
Perylene	0.5	0.484		µg/L		97	48 - 141	0	30
Phenanthrene	0.5	0.44		µg/L		88	67 - 127	4	30
Pyrene	0.5	0.442		µg/L		88	54 - 156	1	30

Surrogate	LCS DUP %Recovery	LCS DUP Qualifier	Limits
(d10-Acenaphthene)	89		27 - 133
(d10-Phenanthrene)	95		43 - 129
(d12-Chrysene)	93		52 - 144
(d12-Perylene)	90		36 - 161
(d8-Naphthalene)	82		25 - 125

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

Lab Sample ID: 23VG39I07B
Matrix: WATER
Analysis Batch: 23VG39I07

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			09/11/23 12:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE					09/11/23 12:35	1

Lab Sample ID: 23VG39I07L
Matrix: WATER
Analysis Batch: 23VG39I07

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	0.461		mg/L		92	60 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOFLUOROBENZENE	105		70 - 130

Lab Sample ID: 23I050-01M
Matrix: WATER
Analysis Batch: 23VG39I07

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	0.479		mg/L		96	50 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61968-2

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

Lab Sample ID: 23I050-01M
Matrix: WATER
Analysis Batch: 23VG39I07

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

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
BROMOFLUOROBENZENE	106		60 - 140

Lab Sample ID: 23I050-01S
Matrix: WATER
Analysis Batch: 23VG39I07

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	0.478		mg/L		96	50 - 130	0	30

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
BROMOFLUOROBENZENE	107		60 - 140

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

Lab Sample ID: 23DSI023WB
Matrix: WATER
Analysis Batch: 23DSI023W

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			09/16/23 03:43	1
JP5	ND	U	0.05		mg/L			09/16/23 03:43	1
JP8	ND	U	0.05		mg/L			09/16/23 03:43	1
MOTOR OIL	ND	U	0.05		mg/L			09/16/23 03:43	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
BROMOBENZENE					09/16/23 03:43	1
HEXACOSANE					09/16/23 03:43	1

Lab Sample ID: 23DSI023WL
Matrix: WATER
Analysis Batch: 23DSI023W

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	2.37		mg/L		95	50 - 130

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
BROMOBENZENE	80		60 - 130
HEXACOSANE	98		60 - 130

Lab Sample ID: 23J5I023WL
Matrix: WATER
Analysis Batch: 23DSI023W

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

QC Sample Results

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

Job ID: 380-61968-2

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

Lab Sample ID: 23J5I023WL
Matrix: WATER
Analysis Batch: 23DSI023W

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

<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	73		60 - 130
HEXACOSANE	92		60 - 130

Lab Sample ID: 23J8I023WL
Matrix: WATER
Analysis Batch: 23DSI023W

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

<i>Analyte</i>	<i>Spike</i> <i>Added</i>	<i>LCS</i> <i>Result</i>	<i>LCS</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i> <i>Limits</i>
JP8	2.5	1.76		mg/L		70	30 - 160

<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	81		60 - 130
HEXACOSANE	89		60 - 130

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QC Association Summary

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

Job ID: 380-61968-2

Subcontract

Analysis Batch: O-42086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-42086_P
380-61968-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-42086_P
110863-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-42086_P
110863-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-42086_P
110863-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-42086_P

Analysis Batch: 23DSI023W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
380-61968-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSI023WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSI023WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5I023WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8I023WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 23VG39I07

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-61968-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-61968-5	TB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-61968-6	TB:AIEA GULCH WELLS P2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39I07B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39I07L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23I050-01M	Matrix Spike	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23I050-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

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QC Association Summary

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

Job ID: 380-61968-2

Subcontract

Prep Batch: O-42086_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	EPA_625	
380-61968-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
110863-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
110863-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
110863-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

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Lab Chronicle

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

Job ID: 380-61968-2

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

Lab Sample ID: 380-61968-1

Date Collected: 09/05/23 11:13

Matrix: Drinking Water

Date Received: 09/07/23 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	EPA_625		1	O-42086_P			09/12/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-42086	YC		10/15/23 02:53
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39I07	SCerva		09/11/23 14:27
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSI023W	SDees		09/20/23 18:48

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61968-2

Date Collected: 09/05/23 10:27

Matrix: Drinking Water

Date Received: 09/07/23 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	EPA_625		1	O-42086_P			09/12/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-42086	YC		10/15/23 04:40
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39I07	SCerva		09/11/23 16:19
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSI023W	SDees		09/16/23 06:12

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

Lab Sample ID: 380-61968-5

Date Collected: 09/05/23 11:13

Matrix: Water

Date Received: 09/07/23 10:40

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	23VG39I07	SCerva		09/11/23 16:56

Client Sample ID: TB:AIEA GULCH WELLS P2

Lab Sample ID: 380-61968-6

Date Collected: 09/05/23 10:27

Matrix: Water

Date Received: 09/07/23 10:40

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	23VG39I07	SCerva		09/11/23 17:33

Laboratory References:

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

Method Summary

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

Job ID: 380-61968-2

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: 380-61968-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-61968-1	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	09/05/23 11:13	09/07/23 10:40
380-61968-2	AIEA GULCH WELLS PUMP 2	Drinking Water	09/05/23 10:27	09/07/23 10:40
380-61968-5	TB: AIEA WELLS PUMPS 1&2 (260)	Water	09/05/23 11:13	09/07/23 10:40
380-61968-6	TB:AIEA GULCH WELLS P2	Water	09/05/23 10:27	09/07/23 10:40

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

Date: 09-28-2023
 EMAX Batch No.: 231050

Attn: Jackie Contreras

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

Subject: Laboratory Report
 Project: 380-61968

Enclosed is the Laboratory report for samples received on 09/08/23.
 The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-61968-1	I050-01	09/05/23	WATER	TPH GASOLINE TPH
380-61968-2	I050-02	09/05/23	WATER	TPH GASOLINE TPH
380-61968-5	I050-03	09/05/23	WATER	TPH GASOLINE
380-61968-6	I050-04	09/05/23	WATER	TPH GASOLINE
380-61968-1MS	I050-01M	09/05/23	WATER	TPH GASOLINE
380-61968-1MSD	I050-01S	09/05/23	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
 Caspar J. Pang
 Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

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

NELAP Accredited Certificate Number CA002912022-24
 ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
 California ELAP Accredited Certificate Number 2672



231050



Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact:	Phone:	Aada, Rachelle		380-76342-1
Shipping/Receiving:	E-Mail:	Rachelle.Arada@et.eurofins.com	State of Origin:	Page: 1 of 1
Company:	Accreditations Required (See note):	State - Hawaii		Job #: 380-61968-1
EMAX Laboratories Inc				Preservation Codes:
Address:	Due Date Requested:			A - HCl B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Ammonia H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsH2O2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - PH 4.5 Y - Trizma Z - other (specify)
3051 Fujita Street,	9/19/2023			
City:	TAT Requested (days):			
Torrance				
State Zip:	PO #:			
CA, 90505				
Phone:	WO #:			
Email:	Project #:			
	38001111			
Project Name:	SSOV#:			
RED-HILL				
Site:				
Honolulu BWS Sites				

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=soil, G=grass, A=air)	Field Filtered Sample (Yes or No)			Perform MS/MSD (Yes or No)			Total Number of containers	Special Instructions/Note:
					SUB (8015 Gas (Purgeable) LL (EAL))	8015 Gas (Purgeable) LL (EAL)	SUB (8015 LL DRO/MRO/JP5/JP8)	8015 LL DRO/MRO/JP5/JP8	Return To Client	Disposal By Lab		
AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-61968-1)	9/5/23	11:13		Water	X	X				6	See Attached Instructions	
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-61968-2)	9/5/23	10:27		Water	X	X				5	See Attached Instructions	
TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-61968-6)	9/5/23	11:13		Water	X	X				2	See Attached Instructions	
TB:AIEA GULCH WELLS P2 (331-202-TP072) (380-61968-6)	9/5/23	10:27		Water	X	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/resistants being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification

Unconfirmed

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

Primary Deliverable Rank: 2

Special Instructions/QCC Requirements: _____

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

Return To Client Disposal By Lab Archive For _____ Months

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	9/8/23	1005	Company: <i>[Signature]</i>
Relinquished by: <i>[Signature]</i>	Date/Time:	Received by: <i>[Signature]</i>	Date/Time: 09/08/23
Relinquished by:	Date/Time:	Received by:	Date/Time:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:	11/10
REPORT ID: 231050			Page: 1 of 1



Type of Delivery	Airbill / Tracking Number	ECN 231050
<input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others		Recipient MARIA RIVERA
<input type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery		Date 9/8/23 Time 1005

COC INSPECTION

<input checked="" type="checkbox"/> Client Name	<input checked="" type="checkbox"/> Client PM/FC	<input type="checkbox"/> Sampler Name	<input checked="" type="checkbox"/> Sampling Date/Time	<input checked="" type="checkbox"/> Sample ID	<input checked="" type="checkbox"/> Matrix
<input checked="" type="checkbox"/> Address	<input checked="" type="checkbox"/> Tel # / Fax #	<input checked="" type="checkbox"/> Courier Signature	<input checked="" type="checkbox"/> Analysis Required	<input type="checkbox"/> Preservative (if any)	<input checked="" type="checkbox"/> TAT
Safety Issues (if any)	<input type="checkbox"/> High concentrations expected	<input type="checkbox"/> From Superfund Site	<input type="checkbox"/> Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 11/10 °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
Thermometer:	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
	<input type="checkbox"/> Cooler 9 _____ °C	<input type="checkbox"/> Cooler 10 _____ °C	

Comments: Temperature is out of range. PM was informed IMMEDIATELY.

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
2	7	D14		R4
3, 4	12, 13, 14, 15	D22	9/5/23, 8/24/23	R1
1, 2	5, 6, 10, 11	D1	label mentions Motor Oil	↓

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

MS 9/12/23

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? YES NO

LEGEND:

- D1** Analysis is not indicated in COC
- 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

- 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** **has 2 dates**
- D23** _____
- D24** _____

Continue to next page.

- 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 **JW/MS**
 Date **9/8/23** / **9/12/23**

SRF **[Signature]**
 Date **9/8/23**

PM **MS**
 Date **9/12/23**

REPORT ID: 231050

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

380-61968

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

SDG#: 23I050

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CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-61968

SDG : 23I050

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

A total of four(4) water samples were received on 09/08/23 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. VG39I07B - 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. VG39I07L/VG39I07C 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 I050-01M/I050-01S. 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.

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SAMPLE RESULTS

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

```

Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/05/23 11:13
Project     : 380-61968                   Date Received: 09/08/23
Batch No.   : 23I050                       Date Extracted: 09/11/23 14:27
Sample ID   : 380-61968-1                 Date Analyzed: 09/11/23 14:27
Lab Samp ID : I050-01                      Dilution Factor: 1
Lab File ID : EI11008A                     Matrix: WATER
Ext Btch ID : 23VG39I07                   % Moisture: NA
Calib. Ref.: EI11004A                     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	0.0322	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: 09/05/23 10:27
Project : 380-61968	Date Received: 09/08/23
Batch No. : 23I050	Date Extracted: 09/11/23 16:19
Sample ID : 380-61968-2	Date Analyzed: 09/11/23 16:19
Lab Samp ID: I050-02	Dilution Factor: 1
Lab File ID: EI11011A	Matrix: WATER
Ext Btch ID: 23VG39I07	% Moisture: NA
Calib. Ref.: EI11004A	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: 09/05/23 11:13
Project : 380-61968	Date Received: 09/08/23
Batch No. : 23I050	Date Extracted: 09/11/23 16:56
Sample ID : 380-61968-5	Date Analyzed: 09/11/23 16:56
Lab Samp ID: I050-03	Dilution Factor: 1
Lab File ID: EI11012A	Matrix: WATER
Ext Btch ID: 23VG39I07	% Moisture: NA
Calib. Ref.: EI11004A	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	0.0314	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

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QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-61968
BATCH NO. : 23I050
METHOD : 5030B/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID : VG39I07B	VG39I07L	VG39I07C
LAB FILE ID : EI11005A	EI11006A	EI11007A
DATE PREPARED : 09/11/23 12:35	09/11/23 13:12	09/11/23 13:50
DATE ANALYZED : 09/11/23 12:35	09/11/23 13:12	09/11/23 13:50
PREP BATCH : 23VG39I07	23VG39I07	23VG39I07
CALIBRATION REF: EI11004A	EI11004A	EI11004A

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	0.461	92	0.500	0.449	90	3	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0420	105	0.0400	0.0417	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 : 380-61968
BATCH NO. : 23I050
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-61968-1	380-61968-1MS	380-61968-1MSD
LAB SAMPLE ID	: I050-01	I050-01M	I050-01S
LAB FILE ID	: EI11008A	EI11009A	EI11010A
DATE PREPARED	: 09/11/23 14:27	09/11/23 15:04	09/11/23 15:42
DATE ANALYZED	: 09/11/23 14:27	09/11/23 15:04	09/11/23 15:42
PREP BATCH	: 23VG39I07	23VG39I07	23VG39I07
CALIBRATION REF:	EI11004A	EI11004A	EI11004A

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	0.479	96	0.500	0.478	96	0	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0425	106	0.0400	0.0427	107	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-61968

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23I050

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CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-61968

SDG : 23I050

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

A total of two(2) water samples were received on 09/08/23 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. DSI023WB - 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. DSI023WL/DSI023WC 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: 380-61968

SDG : 23I050

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of two(2) water samples were received on 09/08/23 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. DSI023WB - 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. J5I023WL/J5I023WC 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: 380-61968

SDG : 23I050

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of two(2) water samples were received on 09/08/23 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.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSI023WB - 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. J8I023WL/J8I023WC 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.

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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/05/23 11:13
Project     : 380-61968                   Date Received: 09/08/23
Batch No.   : 231050                       Date Extracted: 09/14/23 13:15
Sample ID   : 380-61968-1                 Date Analyzed: 09/20/23 18:48
Lab Samp ID : 231050-01                     Dilution Factor: 1
Lab File ID : LI20010A                       Matrix: WATER
Ext Btch ID : 23DSI023W                     % Moisture: NA
Calib. Ref.: LI20003A                       Instrument ID: D5
  
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.026	0.013	
Motor Oil	ND	0.052	0.026	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.358	0.525	68	60-130
Hexacosane	0.129	0.131	98	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 : 950ml           Final Volume : 5ml
Prepared by   : P0reto         Analyzed by   : SDeeso
  
```

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	09/05/23 11:13
Project	: 380-61968	Date Received:	09/08/23
Batch No.	: 231050	Date Extracted:	09/14/23 13:15
Sample ID	: 380-61968-1	Date Analyzed:	09/20/23 18:48
Lab Samp ID:	231050-01	Dilution Factor:	1
Lab File ID:	LI20010A	Matrix:	WATER
Ext Btch ID:	23DSI023W	% Moisture:	NA
Calib. Ref.:	LI20004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.052	0.026	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.358	0.525	68	60-130
Hexacosane	0.129	0.131	98	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 : 950ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	09/05/23 11:13
Project	: 380-61968	Date Received:	09/08/23
Batch No.	: 231050	Date Extracted:	09/14/23 13:15
Sample ID	: 380-61968-1	Date Analyzed:	09/20/23 18:48
Lab Samp ID:	231050-01	Dilution Factor:	1
Lab File ID:	LI20010A	Matrix:	WATER
Ext Btch ID:	23DSI023W	% Moisture:	NA
Calib. Ref.:	LI20005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.358	0.525	68	60-130
Hexacosane	0.129	0.131	98	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 : 950ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 09/05/23 10:27
Project : 380-61968	Date Received: 09/08/23
Batch No. : 23I050	Date Extracted: 09/14/23 13:15
Sample ID : 380-61968-2	Date Analyzed: 09/16/23 06:12
Lab Samp ID: 23I050-02	Dilution Factor: 1
Lab File ID: LI14135A	Matrix: WATER
Ext Btch ID: 23DSI023W	% Moisture: NA
Calib. Ref.: LI14124A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.027	0.013	
Motor Oil	ND	0.053	0.027	

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.404	0.530	76	60-130
Hexacosane	0.120	0.132	91	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 : 940ml	Final Volume : 5ml
Prepared by : P0reto	Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 09/05/23 10:27
Project : 380-61968	Date Received: 09/08/23
Batch No. : 23I050	Date Extracted: 09/14/23 13:15
Sample ID : 380-61968-2	Date Analyzed: 09/16/23 06:12
Lab Samp ID: 23I050-02	Dilution Factor: 1
Lab File ID: LI14135A	Matrix: WATER
Ext Btch ID: 23DSI023W	% Moisture: NA
Calib. Ref.: LI14125A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.053	0.027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.404	0.530	76	60-130
Hexacosane	0.120	0.132	91	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 : 940ml Final Volume : 5ml
 Prepared by : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	09/05/23 10:27
Project	: 380-61968	Date Received:	09/08/23
Batch No.	: 23I050	Date Extracted:	09/14/23 13:15
Sample ID	: 380-61968-2	Date Analyzed:	09/16/23 06:12
Lab Samp ID:	23I050-02	Dilution Factor:	1
Lab File ID:	LI14135A	Matrix:	WATER
Ext Btch ID:	23DSI023W	% Moisture:	NA
Calib. Ref.:	LI14126A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.053	0.027	

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.404	0.530	76	60-130
Hexacosane	0.120	0.132	91	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 : 940ml Final Volume : 5ml
 Prepared by : P0reto Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 09/14/23 13:15
Project : 380-61968	Date Received: 09/14/23
Batch No. : 23I050	Date Extracted: 09/14/23 13:15
Sample ID : MBLK1W	Date Analyzed: 09/16/23 03:43
Lab Samp ID: DSI023WB	Dilution Factor: 1
Lab File ID: LI14127A	Matrix: WATER
Ext Btch ID: 23DSI023W	% Moisture: NA
Calib. Ref.: LI14124A	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	0.372	0.500	74	60-130
Hexacosane	0.102	0.125	82	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 : P0reto	Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-61968
BATCH NO. : 23I050
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W LCD1W
LAB SAMPLE ID : DSI023WB DSI023WL DSI023WC
LAB FILE ID : LI14127A LI14128A LI14129A
DATE PREPARED : 09/14/23 13:15 09/14/23 13:15 09/14/23 13:15
DATE ANALYZED : 09/16/23 03:43 09/16/23 04:02 09/16/23 04:20
PREP BATCH : 23DSI023W 23DSI023W 23DSI023W
CALIBRATION REF: LI14124A LI14124A LI14124A

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	2.37	95	2.50	2.16	86	9	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.402	80	0.500	0.390	78	60-130
Hexacosane	0.125	0.123	98	0.125	0.109	87	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:	09/14/23 13:15
Project	: 380-61968	Date Received:	09/14/23
Batch No.	: 23I050	Date Extracted:	09/14/23 13:15
Sample ID	: MBLK1W	Date Analyzed:	09/16/23 03:43
Lab Samp ID:	DSI023WB	Dilution Factor:	1
Lab File ID:	LI14127A	Matrix:	WATER
Ext Btch ID:	23DSI023W	% Moisture:	NA
Calib. Ref.:	LI14125A	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	0.372	0.500	74	60-130
Hexacosane	0.102	0.125	82	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 : P0reto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-61968
BATCH NO. : 23I050
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1		1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSI023WB	J5I023WL	J5I023WC
LAB FILE ID	: LI14127A	LI14130A	LI14131A
DATE PREPARED	: 09/14/23 13:15	09/14/23 13:15	09/14/23 13:15
DATE ANALYZED	: 09/16/23 03:43	09/16/23 04:39	09/16/23 04:57
PREP BATCH	: 23DSI023W	23DSI023W	23DSI023W
CALIBRATION REF:	LI14125A	LI14125A	LI14125A

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	1.75	70	9	30-160	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	0.387	77	60-130
Hexacosane	0.125	0.115	92	0.125	0.103	82	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: 09/14/23 13:15
 Project : 380-61968 Date Received: 09/14/23
 Batch No. : 23I050 Date Extracted: 09/14/23 13:15
 Sample ID : MBLK1W Date Analyzed: 09/16/23 03:43
 Lab Samp ID: DSI023WB Dilution Factor: 1
 Lab File ID: LI14127A Matrix: WATER
 Ext Btch ID: 23DSI023W % Moisture: NA
 Calib. Ref.: LI14126A 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	0.372	0.500	74	60-130
Hexacosane	0.102	0.125	82	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 : P0reto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-61968
BATCH NO. : 23I050
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W LCD1W
LAB SAMPLE ID : DSI023WB J8I023WL J8I023WC
LAB FILE ID : LI14127A LI14132A LI20009A
DATE PREPARED : 09/14/23 13:15 09/14/23 13:15 09/14/23 13:15
DATE ANALYZED : 09/16/23 03:43 09/16/23 05:16 09/20/23 18:29
PREP BATCH : 23DSI023W 23DSI023W 23DSI023W
CALIBRATION REF: LI14126A LI14126A LI20005A

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	1.76	70	2.50	1.64	66	7	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.404	81	0.500	0.389	78	60-130
Hexacosane	0.125	0.111	89	0.125	0.104	83	60-130

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

October 17, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-61968-1
 Physis Project ID: 1407003-444

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 9/8/2023. A total of 2 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

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

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

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

Regards,

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



PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-444

RED-HILL Project # 38001111 Job # 380-61968-1

Total Samples: 2

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
110864	AIEA WELLS PUMPS 1&2 (2603)	31-203-TP400 (380-61968-1)	9/5/2023	11:13	Samplewater	Not Specified
110865	AIEA GULCH WELLS PUMP	31-202-TP072 (380-61968-2)	9/5/2023	10:27	Samplewater	Not Specified

ABBREVIATIONS and ACRONYMS

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

QUALITY ASSURANCE SUMMARY

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

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

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

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate 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 the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

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

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

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

PHYSIS QUALIFIER CODES

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

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

ANALYTICAL REPORT

TERRA AURA ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 110864-R1 AIEA WELLS PUMPS 1&2 (260) 331- Matrix: Samplewater											
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-42086	12-Sep-23	15-Oct-23
Sample ID: 110865-R1 AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater											
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-42086	12-Sep-23	15-Oct-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
Sample ID: 110864-R1	AIEA WELLS PUMPS 1&2 (260) 331- Matrix: Samplewater						Sampled: 05-Sep-23 11:13		Received: 08-Sep-23			
(d10-Acenaphthene)	EPA 625.1	% Recovery	78	1			Total		O-42086	12-Sep-23	15-Oct-23	
(d10-Phenanthrene)	EPA 625.1	% Recovery	84	1			Total		O-42086	12-Sep-23	15-Oct-23	
(d12-Chrysene)	EPA 625.1	% Recovery	90	1			Total		O-42086	12-Sep-23	15-Oct-23	
(d12-Perylene)	EPA 625.1	% Recovery	83	1			Total		O-42086	12-Sep-23	15-Oct-23	
(d8-Naphthalene)	EPA 625.1	% Recovery	74	1			Total		O-42086	12-Sep-23	15-Oct-23	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23	
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-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-42086	12-Sep-23	15-Oct-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 110865-R1	AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater						Sampled: 05-Sep-23 10:27		Received: 08-Sep-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	65	1			Total		O-42086	12-Sep-23	15-Oct-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	71	1			Total		O-42086	12-Sep-23	15-Oct-23
(d12-Chrysene)	EPA 625.1	% Recovery	82	1			Total		O-42086	12-Sep-23	15-Oct-23
(d12-Perylene)	EPA 625.1	% Recovery	83	1			Total		O-42086	12-Sep-23	15-Oct-23
(d8-Naphthalene)	EPA 625.1	% Recovery	59	1			Total		O-42086	12-Sep-23	15-Oct-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-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-42086	12-Sep-23	15-Oct-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42086	12-Sep-23	15-Oct-23



QUALITY CONTROL REPORT

TERRA CONSULTING AURA ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

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Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Sample ID: 110863-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-42086			Prepared: 12-Sep-23		Analyzed: 14-Oct-23			
Disalicylideneprapanediamine	Total	ND	1	0.05	0.1	µg/L							
Sample ID: 110863-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-42086			Prepared: 12-Sep-23		Analyzed: 14-Oct-23			
Disalicylideneprapanediamine	Total	43.5	1	0.05	0.1	µg/L	50	0	87	50 - 150%	PASS		
Sample ID: 110863-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-42086			Prepared: 12-Sep-23		Analyzed: 14-Oct-23			
Disalicylideneprapanediamine	Total	47.6	1	0.05	0.1	µg/L	50	0	95	50 - 150%	PASS	9	30 PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	%	LIMITS	%
Sample ID: 110863-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
		Method: EPA 625.1				Batch ID: O-42086	Prepared: 12-Sep-23		Analyzed: 14-Oct-23		
(d10-Acenaphthene)	Total	85	1			% Recovery	100	85	27 - 133%	PASS	
(d10-Phenanthrene)	Total	89	1			% Recovery	100	89	43 - 129%	PASS	
(d12-Chrysene)	Total	88	1			% Recovery	100	88	52 - 144%	PASS	
(d12-Perylene)	Total	94	1			% Recovery	100	94	36 - 161%	PASS	
(d8-Naphthalene)	Total	85	1			% Recovery	100	85	25 - 125%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L					
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L					
Anthracene	Total	ND	1	0.001	0.005	µg/L					
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L					
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L					
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Biphenyl	Total	ND	1	0.001	0.005	µg/L					
Chrysene	Total	ND	1	0.001	0.005	µg/L					
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L					
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L					

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

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



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Sample ID: 110863-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
Method: EPA 625.1		Batch ID: O-42086			Prepared: 12-Sep-23		Analyzed: 14-Oct-23						
(d10-Acenaphthene)	Total	89	1			% Recovery	100	0	89	27 - 133%	PASS		
(d10-Phenanthrene)	Total	96	1			% Recovery	100	0	96	43 - 129%	PASS		
(d12-Chrysene)	Total	93	1			% Recovery	100	0	93	52 - 144%	PASS		
(d12-Perylene)	Total	90	1			% Recovery	100	0	90	36 - 161%	PASS		
(d8-Naphthalene)	Total	83	1			% Recovery	100	0	83	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.45	1	0.001	0.005	µg/L	0.5	0	90	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	48 - 120%	PASS		
2-Methylnaphthalene	Total	0.427	1	0.001	0.005	µg/L	0.5	0	85	47 - 130%	PASS		
Acenaphthene	Total	0.45	1	0.001	0.005	µg/L	0.5	0	90	53 - 131%	PASS		
Acenaphthylene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	43 - 140%	PASS		
Anthracene	Total	0.456	1	0.001	0.005	µg/L	0.5	0	91	58 - 135%	PASS		
Benz[a]anthracene	Total	0.531	1	0.001	0.005	µg/L	0.5	0	106	55 - 145%	PASS		
Benzo[a]pyrene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	0.516	1	0.001	0.005	µg/L	0.5	0	103	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.422	1	0.001	0.005	µg/L	0.5	0	84	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	0.473	1	0.001	0.005	µg/L	0.5	0	95	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	56 - 145%	PASS		
Biphenyl	Total	0.452	1	0.001	0.005	µg/L	0.5	0	90	56 - 119%	PASS		
Chrysene	Total	0.394	1	0.001	0.005	µg/L	0.5	0	79	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	0.531	1	0.001	0.005	µg/L	0.5	0	106	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.29	1	0.001	0.005	µg/L	0.5	0	58	50 - 150%	PASS		

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	0.468	1	0.001	0.005	µg/L	0.5	0	94	46 - 126%	PASS		
Fluoranthene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	60 - 146%	PASS		
Fluorene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.505	1	0.001	0.005	µg/L	0.5	0	101	50 - 151%	PASS		
Naphthalene	Total	0.42	1	0.001	0.005	µg/L	0.5	0	84	41 - 126%	PASS		
Perylene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	48 - 141%	PASS		
Phenanthrene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	67 - 127%	PASS		
Pyrene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	54 - 156%	PASS		



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE		ACCURACY		PRECISION		QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Sample ID: 110863-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:			
		Method: EPA 625.1			Batch ID: O-42086			Prepared: 12-Sep-23			Analyzed: 14-Oct-23			
(d10-Acenaphthene)	Total	89	1			% Recovery	100	0	89	27 - 133%	PASS	0	30	PASS
(d10-Phenanthrene)	Total	95	1			% Recovery	100	0	95	43 - 129%	PASS	1	30	PASS
(d12-Chrysene)	Total	93	1			% Recovery	100	0	93	52 - 144%	PASS	0	30	PASS
(d12-Perylene)	Total	90	1			% Recovery	100	0	90	36 - 161%	PASS	0	30	PASS
(d8-Naphthalene)	Total	82	1			% Recovery	100	0	82	25 - 125%	PASS	1	30	PASS
1-Methylnaphthalene	Total	0.408	1	0.001	0.005	µg/L	0.5	0	82	31 - 128%	PASS	8	30	PASS
1-Methylphenanthrene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	66 - 127%	PASS	2	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	55 - 122%	PASS	1	30	PASS
2,6-Dimethylnaphthalene	Total	0.431	1	0.001	0.005	µg/L	0.5	0	86	48 - 120%	PASS	2	30	PASS
2-Methylnaphthalene	Total	0.417	1	0.001	0.005	µg/L	0.5	0	83	47 - 130%	PASS	2	30	PASS
Acenaphthene	Total	0.435	1	0.001	0.005	µg/L	0.5	0	87	53 - 131%	PASS	3	30	PASS
Acenaphthylene	Total	0.429	1	0.001	0.005	µg/L	0.5	0	86	43 - 140%	PASS	7	30	PASS
Anthracene	Total	0.437	1	0.001	0.005	µg/L	0.5	0	87	58 - 135%	PASS	4	30	PASS
Benz[a]anthracene	Total	0.529	1	0.001	0.005	µg/L	0.5	0	106	55 - 145%	PASS	0	30	PASS
Benzo[a]pyrene	Total	0.479	1	0.001	0.005	µg/L	0.5	0	96	51 - 143%	PASS	3	30	PASS
Benzo[b]fluoranthene	Total	0.517	1	0.001	0.005	µg/L	0.5	0	103	46 - 165%	PASS	0	30	PASS
Benzo[e]pyrene	Total	0.416	1	0.001	0.005	µg/L	0.5	0	83	42 - 152%	PASS	1	30	PASS
Benzo[g,h,i]perylene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	63 - 133%	PASS	1	30	PASS
Benzo[k]fluoranthene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	56 - 145%	PASS	1	30	PASS
Biphenyl	Total	0.443	1	0.001	0.005	µg/L	0.5	0	89	56 - 119%	PASS	1	30	PASS
Chrysene	Total	0.39	1	0.001	0.005	µg/L	0.5	0	78	56 - 141%	PASS	1	30	PASS
Dibenz[a,h]anthracene	Total	0.53	1	0.001	0.005	µg/L	0.5	0	106	55 - 150%	PASS	0	30	PASS
Dibenzo[a,l]pyrene	Total	0.298	1	0.001	0.005	µg/L	0.5	0	60	50 - 150%	PASS	3	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY			PRECISION		QA CODE ^c
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Dibenzothiophene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	46 - 126%	PASS	4	30	PASS
Fluoranthene	Total	0.443	1	0.001	0.005	µg/L	0.5	0	89	60 - 146%	PASS	2	30	PASS
Fluorene	Total	0.444	1	0.001	0.005	µg/L	0.5	0	89	58 - 131%	PASS	1	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.501	1	0.001	0.005	µg/L	0.5	0	100	50 - 151%	PASS	1	30	PASS
Naphthalene	Total	0.412	1	0.001	0.005	µg/L	0.5	0	82	41 - 126%	PASS	2	30	PASS
Perylene	Total	0.484	1	0.001	0.005	µg/L	0.5	0	97	48 - 141%	PASS	0	30	PASS
Phenanthrene	Total	0.44	1	0.001	0.005	µg/L	0.5	0	88	67 - 127%	PASS	4	30	PASS
Pyrene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	54 - 156%	PASS	1	30	PASS

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PHYSIS

TENTATIVELY IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 110864

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
32.8594	3.0285	1111	Anthracene-D10	1517-22-2	96
10.0378	2.6643	977	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	91

Concentration estimated using the response for Anthracene-d10

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Sample ID: 110865

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
33.2875	7.3867	1111	Anthracene-D10	1517-22-2	92
10.0396	2.7996	421	Oxalic acid, cyclohexyl ethyl ester	1000309-30-2	92

Concentration estimated using the response for Anthracene-d10

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Sample ID: Lab Blank B1_42086

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
33.3089	5.9312	1111	Anthracene-D10-	1517-22-2	94
10.0410	2.4414	457	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	91

Concentration estimated using the response for Anthracene-d10

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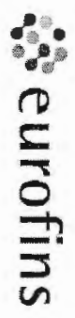
PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Shipping Order Form



Environment Testing



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

Shipping Order ID: 41566

Ship Via: Lab Courier (UNASSIGNED)

Due On: 9/8/2023 11:59:00PM

Ship To Information

Project Manager:

Company Name: *Physis Environmental Laboratories*

Attention: *Shipping/Receiving*

Address 1: *1904 Wright Circle*

Address 2:

Address 3:

City: *Anaheim*

State: *CA*

Zip: *92806*

Phone #:

Project Ref:

Notes to Bottle/Shipping Department

Shipping Method: **Standard packing**

- Ready to Fill
- Preprinted COC
- Number of COC Copies
- Seals on Bottle
- Seals on Coolers
- Priority
- Return Shipment Labels
- Prepaid Return
- Eurofins Eaton Analytical Pomona
- Short Hold Times
- Temperature Control
- Rush

Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.

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Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.

Shipping Order ID: 41566

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Printed on 9/8/2023 8:06:07AM

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Bottle Order Information

Bottle Order:
Bottle Order #:
Request From Client: 9/8/2023
Date Order Posted:
Order Status: Ready To Process
Prepared By:
Deliver By Date: 9/8/2023 11:59:00PM
Lab Project Number:
 PWSID:

Order Completion Information

Creator: Gustavo Sanchez Velasquez
Filled by:
Sent Date:
Sent Via:
Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
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Notes to Field Staff:

Health and Safety Notes:

Preservative

Comment



Scan QR code for field sampler instructions

Relinquished By	Company	Date	Time	Received By	Company	Seal #
Relinquished By	Company	Date	Time	Received By	Company	Seal #

Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.

Project Iteration ID: 1407003-444
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-61968-1
 COC Page Number: 5 of 5
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: VK
2. Date Received: 9/8/23
3. Time Received: 1059
4. Client Name: eurofins
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): -0.1
 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: [Signature]

Sample Integrity Upon Receipt:

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

Notes:

Bottle Order Information

Bottle Order: RUSH RED-HILL WEEKLY
Bottle Order #: 2757
Request From Client: 7/20/2022 11:12:54AM
Date Order Posted: 7/20/2022 11:12:54AM
Order Status: Ready To Process
Prepared By: Davis Healey
Deliver By Date: 8/23/2023 11:59:00PM
Lab Project Number: 38001111
PWSID:

Order Completion Information

Creator: Michelle Do
Filled by:
Sent Date:
Sent Via:
Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
4	2	8	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH	
4	4	16	Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
4	2	8	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
4	2	8	Amber Glass 1 Liter- Sodium Sulfitte/HCl	Sodium Sulfitte w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal		
4	2	8	VOA Vial 40mL- NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		
5	3	15	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - 537.1 Full List	Water	Normal		
5	3	15	Plastic 250ml - Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Water	Normal		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	Plastic 250ml - Ammonium Acetate	Ammonium Acetate		Water	Field Blank		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	Plastic 250ml - Trizma	Trizma		Water	Field Blank		

Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-61968-2

Login Number: 61968
List Number: 1
Creator: Segura, Ryan

List Source: Eurofins Eaton Analytical Pomona

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

