

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-56349-1

Eurofins Eaton Analytical Pomona

Job Notes

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

Compliance Statement

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

Authorization



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Authorized for release by
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Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Action Limit Summary	14
Surrogate Summary	15
QC Sample Results	18
QC Association Summary	33
Lab Chronicle	35
Certification Summary	36
Method Summary	38
Sample Summary	39
Subcontract Data	40
Chain of Custody	108
Receipt Checklists	109

Definitions/Glossary

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

Job ID: 380-56349-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA TICs

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

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: 380-56349-1

Job ID: 380-56349-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-56349-1

Comments

No additional comments.

Receipt

The samples were received on 7/26/2023 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3° C, 2.5° C and 2.9° C.

Receipt Exceptions

One or more containers for the following samples were received broken or leaking: one of the four 8015 Gas (Purgeable) LL (EAL) vials from site AIEA GULCH WELLS PUMP 2 (380-56349-1) was received broken.

GC/MS Semi VOA

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

Subcontract non-Sister

See attached subcontract report.

Organic Prep

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

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.

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.

Detection Summary

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

Job ID: 380-56349-1

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

Lab Sample ID: 380-56349-1

No Detections.

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

Lab Sample ID: 380-56349-2

No Detections.

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-56349-3

No Detections.

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

Lab Sample ID: 380-56349-4

No Detections.

This Detection Summary does not include radiochemical test results.

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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
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- 12
- 13
- 14
- 15
- 16
- 17

Client Sample Results

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

Job ID: 380-56349-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-56349-1

Date Collected: 07/24/23 10:00

Matrix: Drinking Water

Date Received: 07/26/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
2,4'-DDD	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
2,4'-DDE	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
2,4'-DDT	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
2,4-Dinitrotoluene	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
2,6-Dinitrotoluene	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
2-Methylnaphthalene	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
4,4'-DDD	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
4,4'-DDE	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
4,4'-DDT	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Acenaphthene	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Acenaphthylene	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Acetochlor	<0.10	*+	0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Alachlor	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
alpha-BHC	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
alpha-Chlordane	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Anthracene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:25	1
Atrazine	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Benz(a)anthracene	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Benzo[a]pyrene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:25	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:25	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:25	1
beta-BHC	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		07/29/23 15:27	07/31/23 13:25	1
Bromacil	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Butachlor	<0.050	*+	0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Butylbenzylphthalate	<0.50		0.50	ug/L		07/29/23 15:27	07/31/23 13:25	1
Chlorobenzilate	<0.10	^3+	0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Chloroneb	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Chlorothalonil (Draconil, Bravo)	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Chlorpyrifos	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Chrysene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:25	1
delta-BHC	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		07/29/23 15:27	07/31/23 13:25	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Diclorvos (DDVP)	<0.050	*+ ^3+	0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Dieldrin	<0.20		0.20	ug/L		07/29/23 15:27	07/31/23 13:25	1
Diethylphthalate	<0.50		0.50	ug/L		07/29/23 15:27	07/31/23 13:25	1
Dimethylphthalate	<0.50		0.50	ug/L		07/29/23 15:27	07/31/23 13:25	1
Di-n-butyl phthalate	<1.0		1.0	ug/L		07/29/23 15:27	07/31/23 13:25	1
Di-n-octyl phthalate	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Endosulfan I (Alpha)	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Endosulfan II (Beta)	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Endosulfan sulfate	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Endrin	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Endrin aldehyde	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
EPTC	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Fluoranthene	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1

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Client Sample Results

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

Job ID: 380-56349-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-56349-1

Date Collected: 07/24/23 10:00

Matrix: Drinking Water

Date Received: 07/26/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
gamma-Chlordane	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Heptachlor	<0.040		0.040	ug/L		07/29/23 15:27	07/31/23 13:25	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Hexachlorobenzene	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Isophorone	<0.50		0.50	ug/L		07/29/23 15:27	07/31/23 13:25	1
Lindane	<0.040		0.040	ug/L		07/29/23 15:27	07/31/23 13:25	1
Malathion	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Methoxychlor	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Metolachlor	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Molinate	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Naphthalene	<0.30		0.30	ug/L		07/29/23 15:27	07/31/23 13:25	1
Parathion	<0.10	*+ ^3+	0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Pendimethalin (Penoxaline)	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Phenanthrene	<0.040		0.040	ug/L		07/29/23 15:27	07/31/23 13:25	1
Propachlor	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Pyrene	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Simazine	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Terbacil	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Terbutylazine	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1
Thiobencarb	<0.20		0.20	ug/L		07/29/23 15:27	07/31/23 13:25	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		07/29/23 15:27	07/31/23 13:25	1
trans-Nonachlor	<0.050		0.050	ug/L		07/29/23 15:27	07/31/23 13:25	1
Trifluralin	<0.10		0.10	ug/L		07/29/23 15:27	07/31/23 13:25	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	07/29/23 15:27	07/31/23 13:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	99		70 - 130	07/29/23 15:27	07/31/23 13:25	1
Perylene-d12	85		70 - 130	07/29/23 15:27	07/31/23 13:25	1
Triphenylphosphate	111		70 - 130	07/29/23 15:27	07/31/23 13:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Acenaphthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Acenaphthylene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Anthracene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1

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Client Sample Results

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

Job ID: 380-56349-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-56349-1

Date Collected: 07/24/23 10:00

Matrix: Drinking Water

Date Received: 07/26/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Biphenyl	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Chrysene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Dibenzothiophene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		07/28/23 00:00	08/13/23 13:50	1
Fluoranthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Fluorene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Naphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Perylene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Phenanthrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1
Pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 13:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	100		27 - 133	07/28/23 00:00	08/13/23 13:50	1
(d10-Phenanthrene)	89		43 - 129	07/28/23 00:00	08/13/23 13:50	1
(d12-Chrysene)	81		52 - 144	07/28/23 00:00	08/13/23 13:50	1
(d12-Perylene)	69		36 - 161	07/28/23 00:00	08/13/23 13:50	1
(d8-Naphthalene)	93		25 - 125	07/28/23 00:00	08/13/23 13:50	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			07/28/23 13:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	84		60 - 140		07/28/23 13:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			08/02/23 17:14	1
JP5	ND	U	0.05		mg/L			08/02/23 17:14	1
JP8	ND	U	0.05		mg/L			08/02/23 17:14	1
MOTOR OIL	ND	U	0.05		mg/L			08/02/23 17:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	73		60 - 130		08/02/23 17:14	1
HEXACOSANE	92		60 - 130		08/02/23 17:14	1

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

Lab Sample ID: 380-56349-2

Date Collected: 07/24/23 10:30

Matrix: Drinking Water

Date Received: 07/26/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
2,4'-DDD	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
2,4'-DDE	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
2,4'-DDT	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 380-56349-2

Date Collected: 07/24/23 10:30

Matrix: Drinking Water

Date Received: 07/26/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,6-Dinitrotoluene	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
2-Methylnaphthalene	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
4,4'-DDD	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
4,4'-DDE	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
4,4'-DDT	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Acenaphthene	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Acenaphthylene	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Acetochlor	<0.098	*+	0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Alachlor	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
alpha-BHC	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
alpha-Chlordane	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Anthracene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:45	1
Atrazine	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Benz(a)anthracene	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Benzo[a]pyrene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:45	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:45	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:45	1
beta-BHC	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		07/29/23 15:27	07/31/23 13:45	1
Bromacil	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Butachlor	<0.049	*+	0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Butylbenzylphthalate	<0.49		0.49	ug/L		07/29/23 15:27	07/31/23 13:45	1
Chlorobenzilate	<0.098	^3+	0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Chloroneb	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Chlorpyrifos	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Chrysene	<0.020		0.020	ug/L		07/29/23 15:27	07/31/23 13:45	1
delta-BHC	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		07/29/23 15:27	07/31/23 13:45	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Diclorvos (DDVP)	<0.049	*+ ^3+	0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Dieldrin	<0.20		0.20	ug/L		07/29/23 15:27	07/31/23 13:45	1
Diethylphthalate	<0.49		0.49	ug/L		07/29/23 15:27	07/31/23 13:45	1
Dimethylphthalate	<0.49		0.49	ug/L		07/29/23 15:27	07/31/23 13:45	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		07/29/23 15:27	07/31/23 13:45	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Endosulfan sulfate	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Endrin	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Endrin aldehyde	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
EPTC	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Fluoranthene	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Fluorene	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
gamma-Chlordane	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Heptachlor	<0.039		0.039	ug/L		07/29/23 15:27	07/31/23 13:45	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Hexachlorobenzene	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 380-56349-2

Date Collected: 07/24/23 10:30

Matrix: Drinking Water

Date Received: 07/26/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Isophorone	<0.49		0.49	ug/L		07/29/23 15:27	07/31/23 13:45	1
Lindane	<0.039		0.039	ug/L		07/29/23 15:27	07/31/23 13:45	1
Malathion	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Methoxychlor	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Metolachlor	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Molinate	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Naphthalene	<0.29		0.29	ug/L		07/29/23 15:27	07/31/23 13:45	1
Parathion	<0.098	*+ ^3+	0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Phenanthrene	<0.039		0.039	ug/L		07/29/23 15:27	07/31/23 13:45	1
Propachlor	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Pyrene	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Simazine	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Terbacil	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Terbutylazine	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1
Thiobencarb	<0.20		0.20	ug/L		07/29/23 15:27	07/31/23 13:45	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		07/29/23 15:27	07/31/23 13:45	1
trans-Nonachlor	<0.049		0.049	ug/L		07/29/23 15:27	07/31/23 13:45	1
Trifluralin	<0.098		0.098	ug/L		07/29/23 15:27	07/31/23 13:45	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	07/29/23 15:27	07/31/23 13:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	101		70 - 130	07/29/23 15:27	07/31/23 13:45	1
Perylene-d12	90		70 - 130	07/29/23 15:27	07/31/23 13:45	1
Triphenylphosphate	106		70 - 130	07/29/23 15:27	07/31/23 13:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Acenaphthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Acenaphthylene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Anthracene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Biphenyl	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Chrysene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 380-56349-2

Date Collected: 07/24/23 10:30

Matrix: Drinking Water

Date Received: 07/26/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzothiophene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		07/28/23 00:00	08/13/23 15:40	1
Fluoranthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Fluorene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Naphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Perylene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Phenanthrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 15:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	70		27 - 133				07/28/23 00:00	08/13/23 15:40	1
(d10-Phenanthrene)	79		43 - 129				07/28/23 00:00	08/13/23 15:40	1
(d12-Chrysene)	89		52 - 144				07/28/23 00:00	08/13/23 15:40	1
(d12-Perylene)	70		36 - 161				07/28/23 00:00	08/13/23 15:40	1
(d8-Naphthalene)	120		25 - 125				07/28/23 00:00	08/13/23 15:40	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			07/28/23 15:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	85		60 - 140					07/28/23 15:27	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	0.025		mg/L			08/02/23 17:51	1
JP5	ND	U	0.049		mg/L			08/02/23 17:51	1
JP8	ND	U	0.049		mg/L			08/02/23 17:51	1
MOTOR OIL	ND	U	0.049		mg/L			08/02/23 17:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOBENZENE	75		60 - 130					08/02/23 17:51	1
HEXACOSANE	89		60 - 130					08/02/23 17:51	1

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-56349-3

Date Collected: 07/24/23 10:00

Matrix: Water

Date Received: 07/26/23 10:10

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			07/28/23 16:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	84		60 - 140					07/28/23 16:04	1

Client Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 380-56349-4

Date Collected: 07/24/23 10:30

Matrix: Water

Date Received: 07/26/23 10:10

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			07/28/23 16:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	87		60 - 140					07/28/23 16:42	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Action Limit Summary

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

Job ID: 380-56349-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-56349-1

PWSID Number: HI0000331

Compliance Check

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

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

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

Lab Sample ID: 380-56349-2

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.049		ug/L	2		0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3		0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2		0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6		0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400		0.59	525.2	Total/NA
Endrin	<0.098		ug/L	2		0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4		0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2		0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1		0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50		0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2		0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40		0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-56349-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-56349-1	AIEA GULCH WELLS PUMP 2	99	85	111
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	101	90	106

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-56149-B-1-A MS	Matrix Spike	103	90	109
380-56151-B-1-A DU	Duplicate	103	89	114
LCS 380-49293/23-A	Lab Control Sample	103	92	112
LCS D 380-49293/24-A	Lab Control Sample Dup	102	90	112
MB 380-49293/21-A	Method Blank	100	87	113
MRL 380-49293/22-A	Lab Control Sample	97	91	111

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

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)
108656-B1	Method Blank	90	82	119	80	97
108656-BS1	Lab Control Sample	84	71	66	64	69
108656-BS2	Lab Control Sample Dup	83	76	62	67	70

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)
380-56349-1	AIEA GULCH WELLS PUMP 2	100	89	81	93	69
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	70	79	89	120	70

Surrogate Legend

Surrogate Summary

Client: City & County of Honolulu

Job ID: 380-56349-1

Project/Site: RED-HILL

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-56349-1	AIEA GULCH WELLS PUMP 2	84
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	85

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)
23G280-01M	Matrix Spike	105
23G280-01S	Matrix Spike Duplicate	101

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
23VG39G17B	Method Blank	

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)
23VG39G17C	LCD	102
23VG39G17L	Lab Control Sample	102

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)
380-56349-3	TB: AIEA GULCH WELLS PUMF	84

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Surrogate Summary

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

Job ID: 380-56349-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-56349-4	TB: AIEA WELLS PUMPS 1&2 (87

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)
380-56349-1	AIEA GULCH WELLS PUMP 2	73	92
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	75	89

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
23DSH002WB	Method Blank		

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
23DSH002WL	Lab Control Sample	85	100
23J5H002WL	Lab Control Sample	80	90
23J8H002WL	Lab Control Sample	94	84

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: MB 380-49293/21-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49293

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
2,4'-DDD	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
2,4'-DDE	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
2,4'-DDT	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
2-Methylnaphthalene	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
4,4'-DDD	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
4,4'-DDE	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
4,4'-DDT	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Acenaphthene	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Acenaphthylene	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Acetochlor	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Alachlor	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
alpha-BHC	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
alpha-Chlordane	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Anthracene	<0.020		0.020	ug/L		07/29/23 13:51	07/31/23 10:23	1
Atrazine	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Benz(a)anthracene	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Benzo[a]pyrene	<0.020		0.020	ug/L		07/29/23 13:51	07/31/23 10:23	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		07/29/23 13:51	07/31/23 10:23	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		07/29/23 13:51	07/31/23 10:23	1
beta-BHC	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		07/29/23 13:51	07/31/23 10:23	1
Bromacil	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Butachlor	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Butylbenzylphthalate	<0.49		0.49	ug/L		07/29/23 13:51	07/31/23 10:23	1
Chlorobenzilate	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Chloroneb	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Chlorpyrifos	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Chrysene	<0.020		0.020	ug/L		07/29/23 13:51	07/31/23 10:23	1
delta-BHC	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		07/29/23 13:51	07/31/23 10:23	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Dieldrin	<0.20		0.20	ug/L		07/29/23 13:51	07/31/23 10:23	1
Diethylphthalate	<0.49		0.49	ug/L		07/29/23 13:51	07/31/23 10:23	1
Dimethylphthalate	<0.49		0.49	ug/L		07/29/23 13:51	07/31/23 10:23	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		07/29/23 13:51	07/31/23 10:23	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Endosulfan sulfate	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Endrin	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Endrin aldehyde	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
EPTC	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1

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QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: MB 380-49293/21-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49293

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Fluorene	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
gamma-Chlordane	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Heptachlor	<0.039		0.039	ug/L		07/29/23 13:51	07/31/23 10:23	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Hexachlorobenzene	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Isophorone	<0.49		0.49	ug/L		07/29/23 13:51	07/31/23 10:23	1
Lindane	<0.039		0.039	ug/L		07/29/23 13:51	07/31/23 10:23	1
Malathion	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Methoxychlor	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Metolachlor	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Molinate	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Naphthalene	<0.29		0.29	ug/L		07/29/23 13:51	07/31/23 10:23	1
Parathion	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Phenanthrene	<0.039		0.039	ug/L		07/29/23 13:51	07/31/23 10:23	1
Propachlor	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Pyrene	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Simazine	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Terbacil	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Terbutylazine	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1
Thiobencarb	<0.20		0.20	ug/L		07/29/23 13:51	07/31/23 10:23	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		07/29/23 13:51	07/31/23 10:23	1
trans-Nonachlor	<0.049		0.049	ug/L		07/29/23 13:51	07/31/23 10:23	1
Trifluralin	<0.098		0.098	ug/L		07/29/23 13:51	07/31/23 10:23	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tetradecanoic acid	0.966	T J N	ug/L		5.87	544-63-8	07/29/23 13:51	07/31/23 10:23	1
Octadecanoic acid	0.787	T J N	ug/L		6.56	57-11-4	07/29/23 13:51	07/31/23 10:23	1
1,3-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	0.636	T J N	ug/L		9.98	137-89-3	07/29/23 13:51	07/31/23 10:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	100		70 - 130	07/29/23 13:51	07/31/23 10:23	1
Perylene-d12	87		70 - 130	07/29/23 13:51	07/31/23 10:23	1
Triphenylphosphate	113		70 - 130	07/29/23 13:51	07/31/23 10:23	1

Lab Sample ID: LCS 380-49293/23-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.96	2.04		ug/L		104	70 - 130
2,4'-DDD	1.96	2.18		ug/L		111	70 - 130
2,4'-DDE	1.96	2.08		ug/L		106	70 - 130
2,4'-DDT	1.96	2.18		ug/L		111	70 - 130

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QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: LCS 380-49293/23-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	1.96	2.34		ug/L		119	70 - 130
2,6-Dinitrotoluene	1.96	2.24		ug/L		114	70 - 130
2-Methylnaphthalene	1.96	2.04		ug/L		104	70 - 130
4,4'-DDD	1.96	2.11		ug/L		108	70 - 130
4,4'-DDE	1.96	2.04		ug/L		104	70 - 130
4,4'-DDT	1.96	2.20		ug/L		112	70 - 130
Acenaphthene	1.96	1.98		ug/L		101	70 - 130
Acenaphthylene	1.96	2.06		ug/L		105	70 - 130
Acetochlor	1.96	2.62	*+	ug/L		134	70 - 130
Alachlor	1.96	2.39		ug/L		122	70 - 130
alpha-BHC	1.96	2.18		ug/L		111	70 - 130
alpha-Chlordane	1.96	2.03		ug/L		103	70 - 130
Anthracene	1.96	2.04		ug/L		104	70 - 130
Atrazine	1.96	2.27		ug/L		116	70 - 130
Benz(a)anthracene	1.96	2.19		ug/L		112	70 - 130
Benzo[a]pyrene	1.96	1.97		ug/L		100	70 - 130
Benzo[b]fluoranthene	1.96	2.13		ug/L		108	70 - 130
Benzo[g,h,i]perylene	1.96	2.16		ug/L		110	70 - 130
Benzo[k]fluoranthene	1.96	2.11		ug/L		107	70 - 130
beta-BHC	1.96	2.22		ug/L		113	70 - 130
Bis(2-ethylhexyl) phthalate	1.96	2.02		ug/L		103	70 - 130
Bromacil	1.96	2.41		ug/L		123	70 - 130
Butachlor	1.96	2.61	*+	ug/L		133	70 - 130
Butylbenzylphthalate	1.96	2.25		ug/L		115	70 - 130
Chlorobenzilate	1.96	2.46		ug/L		125	70 - 130
Chloroneb	1.96	2.09		ug/L		107	70 - 130
Chlorothalonil (Draconil, Bravo)	1.96	2.19		ug/L		111	70 - 130
Chlorpyrifos	1.96	2.36		ug/L		120	70 - 130
Chrysene	1.96	2.03		ug/L		104	70 - 130
delta-BHC	1.96	2.13		ug/L		109	70 - 130
Di(2-ethylhexyl)adipate	1.96	2.18		ug/L		111	70 - 130
Dibenz(a,h)anthracene	1.96	2.24		ug/L		114	70 - 130
Diclorvos (DDVP)	1.96	2.72	*+	ug/L		138	70 - 130
Dieldrin	1.96	2.08		ug/L		106	70 - 130
Diethylphthalate	1.96	2.31		ug/L		118	70 - 130
Dimethylphthalate	1.96	2.31		ug/L		117	70 - 130
Di-n-butyl phthalate	3.93	4.37		ug/L		111	70 - 130
Di-n-octyl phthalate	1.96	1.93		ug/L		99	70 - 130
Endosulfan I (Alpha)	1.96	1.98		ug/L		101	70 - 130
Endosulfan II (Beta)	1.96	2.23		ug/L		114	70 - 130
Endosulfan sulfate	1.96	2.14		ug/L		109	70 - 130
Endrin	1.96	2.52		ug/L		128	70 - 130
Endrin aldehyde	1.96	2.18		ug/L		111	70 - 130
EPTC	1.96	2.22		ug/L		113	70 - 130
Fluoranthene	1.96	2.30		ug/L		117	70 - 130
Fluorene	1.96	2.24		ug/L		114	70 - 130
gamma-Chlordane	1.96	2.10		ug/L		107	70 - 130
Heptachlor	1.96	2.16		ug/L		110	70 - 130
Heptachlor epoxide (isomer B)	1.96	2.21		ug/L		113	70 - 130

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QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: LCS 380-49293/23-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobenzene	1.96	2.15		ug/L		110	70 - 130
Hexachlorocyclopentadiene	1.96	2.23		ug/L		114	70 - 130
Indeno[1,2,3-cd]pyrene	1.96	2.19		ug/L		111	70 - 130
Isophorone	1.96	2.13		ug/L		108	70 - 130
Lindane	1.96	2.20		ug/L		112	70 - 130
Malathion	1.96	2.38		ug/L		121	70 - 130
Methoxychlor	1.96	2.21		ug/L		113	70 - 130
Metolachlor	1.96	2.46		ug/L		125	70 - 130
Molinate	1.96	2.36		ug/L		120	70 - 130
Naphthalene	1.96	1.92		ug/L		98	70 - 130
Parathion	1.96	2.67	*+	ug/L		136	70 - 130
Pendimethalin (Penoxaline)	1.96	2.37		ug/L		121	70 - 130
Phenanthrene	1.96	1.99		ug/L		101	70 - 130
Propachlor	1.96	2.38		ug/L		121	70 - 130
Pyrene	1.96	2.27		ug/L		116	70 - 130
Simazine	1.96	2.28		ug/L		116	70 - 130
Terbacil	1.96	2.36		ug/L		120	70 - 130
Terbutylazine	1.96	2.39		ug/L		121	70 - 130
Thiobencarb	1.96	2.23		ug/L		114	70 - 130
trans-Nonachlor	1.96	1.94		ug/L		99	70 - 130
Trifluralin	1.96	2.27		ug/L		116	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	103		70 - 130
Perylene-d12	92		70 - 130
Triphenylphosphate	112		70 - 130

Lab Sample ID: LCSD 380-49293/24-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.96	2.01		ug/L		102	70 - 130	2	20
2,4'-DDD	1.96	2.14		ug/L		109	70 - 130	2	20
2,4'-DDE	1.96	2.04		ug/L		104	70 - 130	2	20
2,4'-DDT	1.96	2.14		ug/L		109	70 - 130	2	20
2,4-Dinitrotoluene	1.96	2.45		ug/L		125	70 - 130	5	20
2,6-Dinitrotoluene	1.96	2.36		ug/L		120	70 - 130	5	20
2-Methylnaphthalene	1.96	2.04		ug/L		104	70 - 130	0	20
4,4'-DDD	1.96	2.05		ug/L		105	70 - 130	3	20
4,4'-DDE	1.96	2.02		ug/L		103	70 - 130	1	20
4,4'-DDT	1.96	2.17		ug/L		111	70 - 130	1	20
Acenaphthene	1.96	1.95		ug/L		99	70 - 130	1	20
Acenaphthylene	1.96	2.03		ug/L		103	70 - 130	1	20
Acetochlor	1.96	2.57	*+	ug/L		131	70 - 130	2	20
Alachlor	1.96	2.34		ug/L		119	70 - 130	2	20
alpha-BHC	1.96	2.16		ug/L		110	70 - 130	1	20
alpha-Chlordane	1.96	1.99		ug/L		101	70 - 130	2	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: LCSD 380-49293/24-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Anthracene	1.96	2.01		ug/L		102	70 - 130	2	20	
Atrazine	1.96	2.24		ug/L		114	70 - 130	1	20	
Benz(a)anthracene	1.96	2.13		ug/L		108	70 - 130	3	20	
Benzo[a]pyrene	1.96	1.94		ug/L		99	70 - 130	2	20	
Benzo[b]fluoranthene	1.96	2.03		ug/L		103	70 - 130	5	20	
Benzo[g,h,i]perylene	1.96	2.16		ug/L		110	70 - 130	0	20	
Benzo[k]fluoranthene	1.96	2.07		ug/L		106	70 - 130	2	20	
beta-BHC	1.96	2.21		ug/L		113	70 - 130	0	20	
Bis(2-ethylhexyl) phthalate	1.96	1.97		ug/L		101	70 - 130	2	20	
Bromacil	1.96	2.40		ug/L		122	70 - 130	0	20	
Butachlor	1.96	2.54		ug/L		129	70 - 130	3	20	
Butylbenzylphthalate	1.96	2.17		ug/L		111	70 - 130	3	20	
Chlorobenzilate	1.96	2.38		ug/L		121	70 - 130	3	20	
Chloroneb	1.96	2.06		ug/L		105	70 - 130	2	20	
Chlorothalonil (Draconil, Bravo)	1.96	2.15		ug/L		110	70 - 130	2	20	
Chlorpyrifos	1.96	2.30		ug/L		117	70 - 130	2	20	
Chrysene	1.96	2.02		ug/L		103	70 - 130	1	20	
delta-BHC	1.96	2.10		ug/L		107	70 - 130	2	20	
Di(2-ethylhexyl)adipate	1.96	2.12		ug/L		108	70 - 130	3	20	
Dibenz(a,h)anthracene	1.96	2.24		ug/L		114	70 - 130	0	20	
Diclorvos (DDVP)	1.96	2.77	*+	ug/L		141	70 - 130	2	20	
Dieldrin	1.96	2.07		ug/L		105	70 - 130	1	20	
Diethylphthalate	1.96	2.29		ug/L		117	70 - 130	1	20	
Dimethylphthalate	1.96	2.29		ug/L		117	70 - 130	1	20	
Di-n-butyl phthalate	3.93	4.24		ug/L		108	70 - 130	3	20	
Di-n-octyl phthalate	1.96	1.93		ug/L		98	70 - 130	0	20	
Endosulfan I (Alpha)	1.96	1.95		ug/L		99	70 - 130	2	20	
Endosulfan II (Beta)	1.96	2.14		ug/L		109	70 - 130	4	20	
Endosulfan sulfate	1.96	2.08		ug/L		106	70 - 130	3	20	
Endrin	1.96	2.52		ug/L		128	70 - 130	0	20	
Endrin aldehyde	1.96	2.11		ug/L		107	70 - 130	3	20	
EPTC	1.96	2.20		ug/L		112	70 - 130	1	20	
Fluoranthene	1.96	2.26		ug/L		115	70 - 130	2	20	
Fluorene	1.96	2.19		ug/L		112	70 - 130	2	20	
gamma-Chlordane	1.96	2.06		ug/L		105	70 - 130	2	20	
Heptachlor	1.96	2.15		ug/L		109	70 - 130	1	20	
Heptachlor epoxide (isomer B)	1.96	2.19		ug/L		111	70 - 130	1	20	
Hexachlorobenzene	1.96	2.16		ug/L		110	70 - 130	0	20	
Hexachlorocyclopentadiene	1.96	2.23		ug/L		114	70 - 130	0	20	
Indeno[1,2,3-cd]pyrene	1.96	2.17		ug/L		111	70 - 130	1	20	
Isophorone	1.96	2.16		ug/L		110	70 - 130	1	20	
Lindane	1.96	2.17		ug/L		111	70 - 130	1	20	
Malathion	1.96	2.33		ug/L		119	70 - 130	2	20	
Methoxychlor	1.96	2.19		ug/L		112	70 - 130	1	20	
Metolachlor	1.96	2.44		ug/L		124	70 - 130	1	20	
Molinate	1.96	2.29		ug/L		117	70 - 130	3	20	
Naphthalene	1.96	1.91		ug/L		98	70 - 130	0	20	
Parathion	1.96	2.60	*+	ug/L		132	70 - 130	3	20	
Pendimethalin (Penoxaline)	1.96	2.31		ug/L		118	70 - 130	3	20	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: LCSD 380-49293/24-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Phenanthrene	1.96	1.97		ug/L		100	70 - 130	1	20
Propachlor	1.96	2.38		ug/L		121	70 - 130	0	20
Pyrene	1.96	2.23		ug/L		114	70 - 130	2	20
Simazine	1.96	2.25		ug/L		115	70 - 130	1	20
Terbacil	1.96	2.43		ug/L		124	70 - 130	3	20
Terbutylazine	1.96	2.35		ug/L		120	70 - 130	1	20
Thiobencarb	1.96	2.21		ug/L		112	70 - 130	1	20
trans-Nonachlor	1.96	1.91		ug/L		97	70 - 130	2	20
Trifluralin	1.96	2.27		ug/L		116	70 - 130	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	102		70 - 130
Perylene-d12	90		70 - 130
Triphenylphosphate	112		70 - 130

Lab Sample ID: MRL 380-49293/22-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0978	0.110		ug/L		113	50 - 150
2,4'-DDD	0.0978	0.127		ug/L		130	50 - 150
2,4'-DDE	0.0978	0.104		ug/L		106	50 - 150
2,4'-DDT	0.0978	0.117		ug/L		119	50 - 150
2,4-Dinitrotoluene	0.0978	0.132		ug/L		135	50 - 150
2,6-Dinitrotoluene	0.0978	0.119		ug/L		122	50 - 150
2-Methylnaphthalene	0.0978	0.104		ug/L		107	50 - 150
4,4'-DDD	0.0978	0.111		ug/L		114	50 - 150
4,4'-DDE	0.0978	0.0992		ug/L		101	50 - 150
4,4'-DDT	0.0978	0.128		ug/L		130	50 - 150
Acenaphthene	0.0978	0.0973	J	ug/L		99	50 - 150
Acenaphthylene	0.0978	0.0987		ug/L		101	50 - 150
Acetochlor	0.0489	0.0513	J	ug/L		105	50 - 150
Alachlor	0.0489	0.0562		ug/L		115	50 - 150
alpha-BHC	0.0978	0.101		ug/L		103	50 - 150
alpha-Chlordane	0.0244	<0.028		ug/L		98	50 - 150
Anthracene	0.0196	0.0197	J	ug/L		101	50 - 150
Atrazine	0.0489	0.0669		ug/L		137	50 - 150
Benz(a)anthracene	0.0489	0.0516		ug/L		105	50 - 150
Benzo[a]pyrene	0.0196	0.0174	J	ug/L		89	50 - 150
Benzo[b]fluoranthene	0.0196	0.0197	J	ug/L		101	50 - 150
Benzo[g,h,i]perylene	0.0489	0.0465	J	ug/L		95	50 - 150
Benzo[k]fluoranthene	0.0196	0.0176	J	ug/L		90	50 - 150
beta-BHC	0.0978	0.104		ug/L		106	50 - 150
Bis(2-ethylhexyl) phthalate	0.587	0.758		ug/L		129	50 - 150
Bromacil	0.0978	0.143		ug/L		146	50 - 150
Butachlor	0.0489	0.0639		ug/L		131	50 - 150
Butylbenzylphthalate	0.147	0.212	J	ug/L		144	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: MRL 380-49293/22-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chlorobenzilate	0.0978	0.150	^3+	ug/L		154	50 - 150
Chloroneb	0.0978	0.114		ug/L		116	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0978	0.114		ug/L		117	50 - 150
Chlorpyrifos	0.0489	0.0556		ug/L		114	50 - 150
Chrysene	0.0196	0.0197	J	ug/L		101	50 - 150
delta-BHC	0.0978	0.106		ug/L		108	50 - 150
Di(2-ethylhexyl)adipate	0.293	0.414	J	ug/L		141	50 - 150
Dibenz(a,h)anthracene	0.0489	0.0474	J	ug/L		97	50 - 150
Diclorvos (DDVP)	0.0489	0.0834	^3+	ug/L		170	50 - 150
Dieldrin	0.0978	0.112	J	ug/L		115	50 - 150
Diethylphthalate	0.147	0.194	J	ug/L		132	50 - 150
Dimethylphthalate	0.293	0.313	J	ug/L		107	50 - 150
Di-n-butyl phthalate	0.293	0.330	J	ug/L		113	49 - 243
Di-n-octyl phthalate	0.0978	0.121		ug/L		124	50 - 150
Endosulfan I (Alpha)	0.0978	0.0938	J	ug/L		96	50 - 150
Endosulfan II (Beta)	0.0978	0.128		ug/L		131	50 - 150
Endosulfan sulfate	0.0978	0.107		ug/L		109	50 - 150
Endrin	0.0978	0.145		ug/L		149	50 - 150
Endrin aldehyde	0.0978	0.138		ug/L		141	50 - 150
EPTC	0.0978	0.0960	J	ug/L		98	50 - 150
Fluoranthene	0.0489	0.0556	J	ug/L		114	50 - 150
Fluorene	0.0489	0.0559		ug/L		114	50 - 150
gamma-Chlordane	0.0244	0.0280	J	ug/L		114	50 - 150
Heptachlor	0.0391	0.0510		ug/L		130	50 - 150
Heptachlor epoxide (isomer B)	0.0489	0.0516		ug/L		105	50 - 150
Hexachlorobenzene	0.0489	0.0423	J	ug/L		86	50 - 150
Hexachlorocyclopentadiene	0.0489	0.0507		ug/L		104	50 - 150
Indeno[1,2,3-cd]pyrene	0.0489	0.0418	J	ug/L		86	50 - 150
Isophorone	0.0978	0.108	J	ug/L		111	50 - 150
Lindane	0.0391	0.0390		ug/L		100	50 - 150
Malathion	0.0978	0.119		ug/L		121	50 - 150
Methoxychlor	0.0978	0.126		ug/L		129	50 - 150
Metolachlor	0.0489	0.0607		ug/L		124	50 - 150
Molinate	0.0978	0.105		ug/L		107	50 - 150
Naphthalene	0.0978	0.107	J	ug/L		110	50 - 150
Parathion	0.0978	0.154	^3+	ug/L		157	50 - 150
Pendimethalin (Penoxaline)	0.0978	0.126		ug/L		129	50 - 150
Phenanthrene	0.0196	0.0228	J	ug/L		117	50 - 150
Propachlor	0.0489	0.0543		ug/L		111	50 - 150
Pyrene	0.0489	0.0551		ug/L		113	50 - 150
Simazine	0.0489	0.0628		ug/L		128	50 - 150
Terbacil	0.0978	0.136		ug/L		140	50 - 150
Terbutylazine	0.0978	0.110		ug/L		112	50 - 150
Thiobencarb	0.0978	0.121	J	ug/L		123	50 - 150
trans-Nonachlor	0.0244	0.0264	J	ug/L		108	50 - 150
Trifluralin	0.0978	0.114		ug/L		116	50 - 150

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: MRL 380-49293/22-A
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49293

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	97		70 - 130
Perylene-d12	91		70 - 130
Triphenylphosphate	111		70 - 130

Lab Sample ID: 380-56149-B-1-A MS
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.95	1.99		ug/L		102	70 - 130
2,4'-DDD	<0.098		1.95	2.10		ug/L		108	70 - 130
2,4'-DDE	<0.098		1.95	1.96		ug/L		100	70 - 130
2,4'-DDT	<0.098		1.95	2.06		ug/L		106	70 - 130
2,4-Dinitrotoluene	<0.098		1.95	2.41		ug/L		123	70 - 130
2,6-Dinitrotoluene	<0.098		1.95	2.35		ug/L		121	70 - 130
2-Methylnaphthalene	<0.098		1.95	2.00		ug/L		103	70 - 130
4,4'-DDD	<0.098		1.95	2.00		ug/L		102	70 - 130
4,4'-DDE	<0.098		1.95	1.95		ug/L		100	70 - 130
4,4'-DDT	<0.098		1.95	2.04		ug/L		105	70 - 130
Acenaphthene	<0.098		1.95	1.94		ug/L		99	70 - 130
Acenaphthylene	<0.098		1.95	2.06		ug/L		106	70 - 130
Acetochlor	<0.098	*+	1.95	2.53		ug/L		129	70 - 130
Alachlor	<0.049		1.95	2.28		ug/L		117	70 - 130
alpha-BHC	<0.098		1.95	2.12		ug/L		109	70 - 130
alpha-Chlordane	<0.049		1.95	1.96		ug/L		101	70 - 130
Anthracene	<0.020		1.95	2.00		ug/L		103	70 - 130
Atrazine	<0.049		1.95	2.12		ug/L		109	70 - 130
Benz(a)anthracene	<0.049		1.95	2.03		ug/L		104	70 - 130
Benzo[a]pyrene	<0.020		1.95	1.93		ug/L		99	70 - 130
Benzo[b]fluoranthene	<0.020		1.95	2.06		ug/L		106	70 - 130
Benzo[g,h,i]perylene	<0.049		1.95	2.15		ug/L		110	70 - 130
Benzo[k]fluoranthene	<0.020		1.95	2.01		ug/L		103	70 - 130
beta-BHC	<0.098		1.95	2.08		ug/L		107	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.95	2.02		ug/L		104	70 - 130
Bromacil	<0.098		1.95	2.39		ug/L		122	70 - 130
Butachlor	<0.049	*+	1.95	2.54		ug/L		130	70 - 130
Butylbenzylphthalate	<0.49		1.95	2.11		ug/L		108	70 - 130
Chlorobenzilate	<0.098	^3+	1.95	2.48		ug/L		127	70 - 130
Chloroneb	<0.098		1.95	2.05		ug/L		105	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.95	2.05		ug/L		105	70 - 130
Chlorpyrifos	<0.049		1.95	2.21		ug/L		113	70 - 130
Chrysene	<0.020		1.95	2.01		ug/L		103	70 - 130
delta-BHC	<0.098		1.95	2.00		ug/L		102	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.95	2.07		ug/L		102	70 - 130
Dibenz(a,h)anthracene	<0.049		1.95	2.16		ug/L		111	70 - 130
Diclorvos (DDVP)	<0.049	*+ ^3+ F1	1.95	2.66	F1	ug/L		136	70 - 130
Dieldrin	<0.20		1.95	2.01		ug/L		103	70 - 130
Diethylphthalate	<0.49		1.95	2.28		ug/L		117	70 - 130

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 380-56149-B-1-A MS

Matrix: Water

Analysis Batch: 49571

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 49293

Analyte	Sample	Sample Qualifier	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result			Result	Qualifier				
Dimethylphthalate	<0.49		1.95	2.31		ug/L		118	70 - 130
Di-n-butyl phthalate	<0.98		3.90	4.18		ug/L		107	70 - 130
Di-n-octyl phthalate	<0.098		1.95	1.89		ug/L		97	70 - 130
Endosulfan I (Alpha)	<0.098		1.95	1.87		ug/L		96	70 - 130
Endosulfan II (Beta)	<0.098		1.95	2.13		ug/L		109	70 - 130
Endosulfan sulfate	<0.098		1.95	2.03		ug/L		104	70 - 130
Endrin	<0.098		1.95	2.49		ug/L		128	70 - 130
Endrin aldehyde	<0.098		1.95	1.92		ug/L		98	70 - 130
EPTC	<0.098		1.95	2.25		ug/L		115	70 - 130
Fluoranthene	<0.098		1.95	2.19		ug/L		112	70 - 130
Fluorene	<0.049		1.95	2.19		ug/L		112	70 - 130
gamma-Chlordane	<0.049		1.95	1.99		ug/L		102	70 - 130
Heptachlor	<0.039		1.95	2.10		ug/L		108	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.95	2.09		ug/L		107	70 - 130
Hexachlorobenzene	<0.049		1.95	2.13		ug/L		109	70 - 130
Hexachlorocyclopentadiene	<0.049		1.95	2.09		ug/L		107	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.95	2.15		ug/L		110	70 - 130
Isophorone	<0.49		1.95	2.14		ug/L		110	70 - 130
Lindane	<0.039		1.95	2.08		ug/L		107	70 - 130
Malathion	<0.098		1.95	2.31		ug/L		118	70 - 130
Methoxychlor	<0.098		1.95	2.23		ug/L		114	70 - 130
Metolachlor	<0.049		1.95	2.42		ug/L		124	70 - 130
Molinate	<0.098		1.95	2.41		ug/L		124	70 - 130
Naphthalene	<0.29		1.95	1.91		ug/L		97	70 - 130
Parathion	<0.098	*+ ^3+ F1	1.95	2.65	F1	ug/L		136	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.95	2.32		ug/L		119	70 - 130
Phenanthrene	<0.039		1.95	1.95		ug/L		100	70 - 130
Propachlor	<0.049		1.95	2.36		ug/L		121	70 - 130
Pyrene	<0.049		1.95	2.18		ug/L		112	70 - 130
Simazine	<0.049		1.95	2.18		ug/L		112	70 - 130
Terbacil	<0.098		1.95	2.35		ug/L		120	70 - 130
Terbutylazine	<0.098		1.95	2.27		ug/L		116	70 - 130
Thiobencarb	<0.20		1.95	2.16		ug/L		111	70 - 130
trans-Nonachlor	<0.049		1.95	1.84		ug/L		94	70 - 130
Trifluralin	<0.098		1.95	2.27		ug/L		116	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	103		70 - 130
Perylene-d12	90		70 - 130
Triphenylphosphate	109		70 - 130

Lab Sample ID: 380-56151-B-1-A DU

Matrix: Water

Analysis Batch: 49571

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 49293

Analyte	Sample Result	Sample Qualifier	DU	DU	Unit	D	RPD	RPD Limit
			Result	Qualifier				
1-Methylnaphthalene	<0.098		<0.098		ug/L		NC	20
2,4'-DDD	<0.098		<0.098		ug/L		NC	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 380-56151-B-1-A DU
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
2,4'-DDE	<0.098		<0.098		ug/L		NC	20
2,4'-DDT	<0.098		<0.098		ug/L		NC	20
2,4-Dinitrotoluene	<0.098		<0.098		ug/L		NC	20
2,6-Dinitrotoluene	<0.098		<0.098		ug/L		NC	20
2-Methylnaphthalene	<0.098		<0.098		ug/L		NC	20
4,4'-DDD	<0.098		<0.098		ug/L		NC	20
4,4'-DDE	<0.098		<0.098		ug/L		NC	20
4,4'-DDT	<0.098		<0.098		ug/L		NC	20
Acenaphthene	<0.098		<0.098		ug/L		NC	20
Acenaphthylene	<0.098		<0.098		ug/L		NC	20
Acetochlor	<0.098	*+	<0.098	*+	ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.098		<0.098		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.098		<0.098		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.098		<0.098		ug/L		NC	20
Butachlor	<0.049	*+	<0.049	*+	ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.098	^3+	<0.098		ug/L		NC	20
Chloroneb	<0.098		<0.098		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.098		<0.098		ug/L		NC	20
Chlorpyrifos	<0.049		<0.049		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.098		<0.098		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.59		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049	*+ ^3+	<0.049	*+	ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.49		<0.49		ug/L		NC	20
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20
Di-n-butyl phthalate	<0.98		<0.98		ug/L		NC	20
Di-n-octyl phthalate	<0.098		<0.098		ug/L		NC	20
Endosulfan I (Alpha)	<0.098		<0.098		ug/L		NC	20
Endosulfan II (Beta)	<0.098		<0.098		ug/L		NC	20
Endosulfan sulfate	<0.098		<0.098		ug/L		NC	20
Endrin	<0.098		<0.098		ug/L		NC	20
Endrin aldehyde	<0.098		<0.098		ug/L		NC	20
EPTC	<0.098		<0.098		ug/L		NC	20
Fluoranthene	<0.098		<0.098		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 380-56151-B-1-A DU
Matrix: Water
Analysis Batch: 49571

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 49293

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Heptachlor	<0.039		<0.039		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.049		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.049		ug/L		NC	20
Isophorone	<0.49		<0.49		ug/L		NC	20
Lindane	<0.039		<0.039		ug/L		NC	20
Malathion	<0.098		<0.098		ug/L		NC	20
Methoxychlor	<0.098		<0.098		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.098		<0.098		ug/L		NC	20
Naphthalene	<0.29		<0.29		ug/L		NC	20
Parathion	<0.098	*+ ^3+	<0.098	*+	ug/L		NC	20
Pendimethalin (Penoxaline)	<0.098		<0.098		ug/L		NC	20
Phenanthrene	<0.039		<0.039		ug/L		NC	20
Propachlor	<0.049		<0.049		ug/L		NC	20
Pyrene	<0.049		<0.049		ug/L		NC	20
Simazine	<0.049		<0.049		ug/L		NC	20
Terbacil	<0.098		<0.098		ug/L		NC	20
Terbutylazine	<0.098		<0.098		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.049		ug/L		NC	20
Trifluralin	<0.098		<0.098		ug/L		NC	20
		DU	DU					
Surrogate	%Recovery	Qualifier	Limits					
2-Nitro-m-xylene	103		70 - 130					
Perylene-d12	89		70 - 130					
Triphenylphosphate	114		70 - 130					

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

Lab Sample ID: 108656-B1
Matrix: BlankMatrix
Analysis Batch: O-42010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-42010_P

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1-Methylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Acenaphthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Acenaphthylene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Anthracene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 108656-B1
Matrix: BlankMatrix
Analysis Batch: O-42010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-42010_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Biphenyl	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Chrysene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Dibenzothiophene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		07/28/23 00:00	08/13/23 06:34	1
Fluoranthene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Fluorene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Naphthalene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Perylene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Phenanthrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1
Pyrene	ND		0.005	0.001	µg/L		07/28/23 00:00	08/13/23 06:34	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	90		27 - 133	07/28/23 00:00	08/13/23 06:34	1
(d10-Phenanthrene)	82		43 - 129	07/28/23 00:00	08/13/23 06:34	1
(d12-Chrysene)	119		52 - 144	07/28/23 00:00	08/13/23 06:34	1
(d12-Perylene)	97		36 - 161	07/28/23 00:00	08/13/23 06:34	1
(d8-Naphthalene)	80		25 - 125	07/28/23 00:00	08/13/23 06:34	1

Lab Sample ID: 108656-BS1
Matrix: BlankMatrix
Analysis Batch: O-42010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-42010_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.561		µg/L		112	31 - 128
1-Methylphenanthrene	0.5	0.508		µg/L		102	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.513		µg/L		103	55 - 122
2,6-Dimethylnaphthalene	0.5	0.435		µg/L		87	48 - 120
2-Methylnaphthalene	0.5	0.552		µg/L		110	47 - 130
Acenaphthene	0.5	0.441		µg/L		88	53 - 131
Acenaphthylene	0.5	0.618		µg/L		124	43 - 140
Anthracene	0.5	0.529		µg/L		106	58 - 135
Benz[a]anthracene	0.5	0.453		µg/L		91	55 - 145
Benzo[a]pyrene	0.5	0.505		µg/L		101	51 - 143
Benzo[b]fluoranthene	0.5	0.575		µg/L		115	46 - 165
Benzo[e]pyrene	0.5	0.588		µg/L		118	42 - 152
Benzo[g,h,i]perylene	0.5	0.465		µg/L		93	63 - 133
Benzo[k]fluoranthene	0.5	0.557		µg/L		111	56 - 145
Biphenyl	1	0.678		µg/L		68	56 - 119
Chrysene	0.5	0.425		µg/L		85	56 - 141
Dibenz[a,h]anthracene	0.5	0.513		µg/L		103	55 - 150
Dibenzo[a,l]pyrene	0.5	0.567		µg/L		113	50 - 150
Dibenzothiophene	0.5	0.524		µg/L		105	46 - 126
Disalicylidenepropanediamine	50	34.7		µg/L		69	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 108656-BS1
Matrix: BlankMatrix
Analysis Batch: O-42010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-42010_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	0.5	0.563		µg/L		113	60 - 146
Fluorene	0.5	0.503		µg/L		101	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.506		µg/L		101	50 - 151
Naphthalene	0.5	0.432		µg/L		86	41 - 126
Perylene	0.5	0.429		µg/L		86	48 - 141
Phenanthrene	0.5	0.492		µg/L		98	67 - 127
Pyrene	0.5	0.532		µg/L		106	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	84		27 - 133
(d10-Phenanthrene)	71		43 - 129
(d12-Chrysene)	66		52 - 144
(d12-Perylene)	69		36 - 161
(d8-Naphthalene)	64		25 - 125

Lab Sample ID: 108656-BS2
Matrix: BlankMatrix
Analysis Batch: O-42010

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-42010_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.565		µg/L		113	31 - 128	1	30
1-Methylphenanthrene	0.5	0.55		µg/L		110	66 - 127	8	30
2,3,5-Trimethylnaphthalene	0.5	0.482		µg/L		96	55 - 122	7	30
2,6-Dimethylnaphthalene	0.5	0.469		µg/L		94	48 - 120	8	30
2-Methylnaphthalene	0.5	0.548		µg/L		110	47 - 130	0	30
Acenaphthene	0.5	0.437		µg/L		87	53 - 131	1	30
Acenaphthylene	0.5	0.543		µg/L		109	43 - 140	13	30
Anthracene	0.5	0.476		µg/L		95	58 - 135	11	30
Benz[a]anthracene	0.5	0.484		µg/L		97	55 - 145	6	30
Benzo[a]pyrene	0.5	0.406		µg/L		81	51 - 143	22	30
Benzo[b]fluoranthene	0.5	0.57		µg/L		114	46 - 165	1	30
Benzo[e]pyrene	0.5	0.49		µg/L		98	42 - 152	19	30
Benzo[g,h,i]perylene	0.5	0.462		µg/L		92	63 - 133	1	30
Benzo[k]fluoranthene	0.5	0.521		µg/L		104	56 - 145	7	30
Biphenyl	1	0.678		µg/L		68	56 - 119	0	30
Chrysene	0.5	0.418		µg/L		84	56 - 141	1	30
Dibenz[a,h]anthracene	0.5	0.411		µg/L		82	55 - 150	23	30
Dibenzo[a,l]pyrene	0.5	0.417		µg/L		83	50 - 150	31	30
Dibenzothiophene	0.5	0.482		µg/L		96	46 - 126	9	30
Disalicylidenepropanediamine	50	34.2		µg/L		68	50 - 150	1	30
Fluoranthene	0.5	0.513		µg/L		103	60 - 146	9	30
Fluorene	0.5	0.402		µg/L		80	58 - 131	23	30
Indeno[1,2,3-cd]pyrene	0.5	0.434		µg/L		87	50 - 151	15	30
Naphthalene	0.5	0.452		µg/L		90	41 - 126	5	30
Perylene	0.5	0.428		µg/L		86	48 - 141	0	30
Phenanthrene	0.5	0.447		µg/L		89	67 - 127	10	30
Pyrene	0.5	0.609		µg/L		122	54 - 156	14	30

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 108656-BS2
Matrix: BlankMatrix
Analysis Batch: O-42010

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-42010_P

Surrogate	LCS DUP %Recovery	LCS DUP Qualifier	Limits
(d10-Acenaphthene)	83		27 - 133
(d10-Phenanthrene)	76		43 - 129
(d12-Chrysene)	62		52 - 144
(d12-Perylene)	70		36 - 161
(d8-Naphthalene)	67		25 - 125

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

Lab Sample ID: 23VG39G17B
Matrix: WATER
Analysis Batch: 23VG39G17

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			07/28/23 11:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE					07/28/23 11:40	1

Lab Sample ID: 23VG39G17L
Matrix: WATER
Analysis Batch: 23VG39G17

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	0.436		mg/L		87	60 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOFLUOROBENZENE	102		70 - 130

Lab Sample ID: 23G280-01M
Matrix: WATER
Analysis Batch: 23VG39G17

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	0.45		mg/L		90	50 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
BROMOFLUOROBENZENE	105		60 - 140

Lab Sample ID: 23G280-01S
Matrix: WATER
Analysis Batch: 23VG39G17

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	0.439		mg/L		88	50 - 130	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
BROMOFLUOROBENZENE	101		60 - 140

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-56349-1

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

Lab Sample ID: 23DSH002WB
Matrix: WATER
Analysis Batch: 23DSH002W

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			08/02/23 13:10	1
JP5	ND	U	0.05		mg/L			08/02/23 13:10	1
JP8	ND	U	0.05		mg/L			08/02/23 13:10	1
MOTOR OIL	ND	U	0.05		mg/L			08/02/23 13:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE					08/02/23 13:10	1
HEXACOSANE					08/02/23 13:10	1

Lab Sample ID: 23DSH002WL
Matrix: WATER
Analysis Batch: 23DSH002W

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	2.42		mg/L		97	50 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	85		60 - 130
HEXACOSANE	100		60 - 130

Lab Sample ID: 23J5H002WL
Matrix: WATER
Analysis Batch: 23DSH002W

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	1.69		mg/L		68	30 - 160

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	80		60 - 130
HEXACOSANE	90		60 - 130

Lab Sample ID: 23J8H002WL
Matrix: WATER
Analysis Batch: 23DSH002W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
JP8	2.5	2.39		mg/L		96	30 - 160

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	94		60 - 130
HEXACOSANE	84		60 - 130

QC Association Summary

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

Job ID: 380-56349-1

GC/MS Semi VOA

Prep Batch: 49293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-56349-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	525.2	
MB 380-49293/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-49293/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-49293/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-49293/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-56149-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-56151-B-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 49571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-56349-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	49293
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	525.2	49293
MB 380-49293/21-A	Method Blank	Total/NA	Water	525.2	49293
LCS 380-49293/23-A	Lab Control Sample	Total/NA	Water	525.2	49293
LCSD 380-49293/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	49293
MRL 380-49293/22-A	Lab Control Sample	Total/NA	Water	525.2	49293
380-56149-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	49293
380-56151-B-1-A DU	Duplicate	Total/NA	Water	525.2	49293

Subcontract

Analysis Batch: O-42010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-56349-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-42010_P
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-42010_P
108656-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-42010_P
108656-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-42010_P
108656-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-42010_P

Analysis Batch: 23DSH002W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-56349-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSH002WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSH002WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5H002WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8H002WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-56349-1

Subcontract

Analysis Batch: 23VG39G17

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-56349-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-56349-3	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-56349-4	TB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39G17B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39G17L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23G280-01M	Matrix Spike	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23G280-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-42010_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-56349-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	EPA_625	
108656-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
108656-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
108656-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-56349-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-56349-1

Date Collected: 07/24/23 10:00

Matrix: Drinking Water

Date Received: 07/26/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			49293	N8NE	EA POM	07/29/23 15:27
Total/NA	Analysis	525.2		1	49571	Q8LA	EA POM	07/31/23 13:25
Total/NA	Prep	EPA_625		1	O-42010_P			07/28/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-42010	YC		08/13/23 13:50
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39G17	SCerva		07/28/23 13:33
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSH002W	SDees		08/02/23 17:14

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

Lab Sample ID: 380-56349-2

Date Collected: 07/24/23 10:30

Matrix: Drinking Water

Date Received: 07/26/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			49293	N8NE	EA POM	07/29/23 15:27
Total/NA	Analysis	525.2		1	49571	Q8LA	EA POM	07/31/23 13:45
Total/NA	Prep	EPA_625		1	O-42010_P			07/28/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-42010	YC		08/13/23 15:40
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39G17	SCerva		07/28/23 15:27
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSH002W	SDees		08/02/23 17:51

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-56349-3

Date Collected: 07/24/23 10:00

Matrix: Water

Date Received: 07/26/23 10:10

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	23VG39G17	SCerva		07/28/23 16:04

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

Lab Sample ID: 380-56349-4

Date Collected: 07/24/23 10:30

Matrix: Water

Date Received: 07/26/23 10:10

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	23VG39G17	SCerva		07/28/23 16:42

Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806
EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Accreditation/Certification Summary

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

Job ID: 380-56349-1

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

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

Accreditation/Certification Summary

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

Job ID: 380-56349-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbutylazine
525.2	525.2	Drinking Water	Thiobencarb
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor
525.2	525.2	Drinking Water	Trifluralin



Method Summary

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

Job ID: 380-56349-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	
525.2	Extraction of Semivolatile Compounds	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

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



Sample Summary

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

Job ID: 380-56349-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-56349-1	AIEA GULCH WELLS PUMP 2	Drinking Water	07/24/23 10:00	07/26/23 10:10	HI0000331
380-56349-2	AIEA WELLS PUMPS 1&2 (260)	Drinking Water	07/24/23 10:30	07/26/23 10:10	HI0000331
380-56349-3	TB: AIEA GULCH WELLS PUMP 2	Water	07/24/23 10:00	07/26/23 10:10	
380-56349-4	TB: AIEA WELLS PUMPS 1&2 (260)	Water	07/24/23 10:30	07/26/23 10:10	

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3051 Fujita Street
Torrance, CA 90505
Tel: (310)-618-8889

Date: 08-15-2023
EMAX Batch No.: 23G280

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-56349

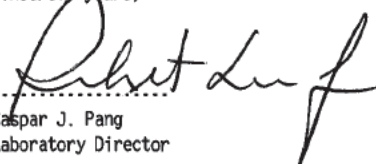
Enclosed is the Laboratory report for samples received on 07/27/23.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-56349-1	G280-01	07/24/23	WATER	TPH GASOLINE TPH
380-56349-2	G280-02	07/24/23	WATER	TPH GASOLINE TPH
380-56349-3	G280-03	07/24/23	WATER	TPH GASOLINE
380-56349-4	G280-04	07/24/23	WATER	TPH GASOLINE

The results are summarized on the following pages.

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

Sincerely yours,


Caspar J. Pang
Laboratory Director

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

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

Chain of Custody Record



236280



Environment Testing

Client Information (Sub Contract Lab)

Client Contact:
Shipping/Receiving

Company:
EMAX Laboratories Inc

Address:
3051 Fujita Street,

City:
Torrance

State, Zip:
CA, 90505

Phone:

Email:

Project Name:
RED-HILL

Site:
Honolulu BWS Sites

Sampler:
Arzda, Rachelle

Phone:
Rachelle.Arzda@et.eurofins.com

Due Date Requested:
8/9/2023

TAT Requested (days):

PO #:

WO #:

Project #:
38001111

SSOW#:

Lab PM:
Arzda, Rachelle

E-Mail:
Rachelle.Arzda@et.eurofins.com

Accreditations Required (See note):
State - Hawaii

Carrier Tracking Note(s):

State of Origin:
Hawaii

COC No:
380-66161-1

Page:
Page 1 of 1

Job #:
380-56349-1

Preservation Codes:

A - HCl
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDTA
M - Hexane
N - None
O - AsN2O2
P - Na2SO4
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)

Sample Identification - Client ID (Lab ID)

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Inventor, Synthetic, Other)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Total Number of containers	Special Instructions/Note
1 AIEA GULCH WELLS PUMP 2 (380-56349-1)	7/24/23	10:00	Hawaiian	Water		X	X		5	See Attached Instructions
2 AIEA WELLS PUMPS 1&2 (260) (380-56349-2)	7/24/23	10:30	Hawaiian	Water		X	X		6	See Attached Instructions
3 TB: AIEA GULCH WELLS PUMP 2 (380-56349-3)	7/24/23	10:00	Hawaiian	Water		X	X		2	See Attached Instructions
4 TB: AIEA WELLS PUMPS 1&2 (260) (380-56349-4)	7/24/23	10:30	Hawaiian	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/leas/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification

Unconfirmed

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

Empty Kit: Relinquished by:

Relinquished by: *[Signature]*

Relinquished by:

Relinquished by:

Custody Seals Intact: Yes No

REPORT ID: 236280

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

Special Instructions/QC Requirements:

Method of Shipment:

Received by: *[Signature]*

Received by:

Cooler Temperature(s) °C and Other Remarks: 3.6/3.4 cf: -0.2

Page 2 of 2

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

380-56349

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

SDG#: 23G280



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-56349-1

SDG : 23G280

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

A total of four(4) water samples were received on 07/27/23 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. VG39G17B - 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. VG39G17L/VG39G17C 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 G280-01M/G280-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL
Project : 380-56349-1

SDG NO. : 23G280
Instrument ID : GCT039

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
									WATER
MBLKIW	VG39G17B	1	NA	07/28/2311:40	07/28/2311:40	EG28005A	EG28004A	23VG39G17	Method Blank
LCSIW	VG39G17L	1	NA	07/28/2312:17	07/28/2312:17	EG28006A	EG28004A	23VG39G17	Lab Control Sample (LCS)
LCDIW	VG39G17C	1	NA	07/28/2312:55	07/28/2312:55	EG28007A	EG28004A	23VG39G17	LCS Duplicate
380-56349-1	G280-01	1	NA	07/28/2313:33	07/28/2313:33	EG28008A	EG28004A	23VG39G17	Field Sample
380-56349-1MS	G280-01M	1	NA	07/28/2314:12	07/28/2314:12	EG28009A	EG28004A	23VG39G17	Matrix Spike Sample (MS)
380-56349-2	G280-01S	1	NA	07/28/2314:49	07/28/2314:49	EG28010A	EG28004A	23VG39G17	MS Duplicate (MSD)
380-56349-3	G280-02	1	NA	07/28/2315:27	07/28/2315:27	EG28011A	EG28004A	23VG39G17	Field Sample
380-56349-4	G280-03	1	NA	07/28/2316:04	07/28/2316:04	EG28012A	EG28004A	23VG39G17	Field Sample
	G280-04	1	NA	07/28/2316:42	07/28/2316:42	EG28013A	EG28004A	23VG39G17	Field Sample

FN - Filename
% Moist - Percent Moisture



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SAMPLE RESULTS

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/24/23 10:00
Project : 380-56349-1	Date Received: 07/27/23
Batch No. : 23G280	Date Extracted: 07/28/23 13:33
Sample ID : 380-56349-1	Date Analyzed: 07/28/23 13:33
Lab Samp ID: G280-01	Dilution Factor: 1
Lab File ID: EG28008A	Matrix: WATER
Ext Btch ID: 23VG39G17	% Moisture: NA
Calib. Ref.: EG28004A	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	0.0336	0.0400	84	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: 07/24/23 10:00
Project : 380-56349-1	Date Received: 07/27/23
Batch No. : 23G280	Date Extracted: 07/28/23 16:04
Sample ID : 380-56349-3	Date Analyzed: 07/28/23 16:04
Lab Samp ID: G280-03	Dilution Factor: 1
Lab File ID: EG28012A	Matrix: WATER
Ext Btch ID: 23VG39G17	% Moisture: NA
Calib. Ref.: EG28004A	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	0.0337	0.0400	84	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:	07/24/23 10:30
Project	: 380-56349-1	Date Received:	07/27/23
Batch No.	: 23G280	Date Extracted:	07/28/23 16:42
Sample ID	: 380-56349-4	Date Analyzed:	07/28/23 16:42
Lab Samp ID:	G280-04	Dilution Factor:	1
Lab File ID:	EG28013A	Matrix:	WATER
Ext Btch ID:	23VG39G17	% Moisture:	NA
Calib. Ref.:	EG28004A	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	0.0347	0.0400	87	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

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/28/23 11:40
Project : 380-56349-1	Date Received: 07/28/23
Batch No. : 23G280	Date Extracted: 07/28/23 11:40
Sample ID : MBLK1W	Date Analyzed: 07/28/23 11:40
Lab Samp ID: VG39G17B	Dilution Factor: 1
Lab File ID: EG28005A	Matrix: WATER
Ext Btch ID: 23VG39G17	% Moisture: NA
Calib. Ref.: EG28004A	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	0.0347	0.0400	87	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-56349-1
BATCH NO. : 23G280
METHOD : 5030B/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID : VG39G17B	VG39G17L	VG39G17C
LAB FILE ID : EG28005A	EG28006A	EG28007A
DATE PREPARED : 07/28/23 11:40	07/28/23 12:17	07/28/23 12:55
DATE ANALYZED : 07/28/23 11:40	07/28/23 12:17	07/28/23 12:55
PREP BATCH : 23VG39G17	23VG39G17	23VG39G17
CALIBRATION REF: EG28004A	EG28004A	EG28004A

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	0.436	87	0.500	0.422	84	3	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0407	102	0.0400	0.0408	102	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 : 380-56349-1
BATCH NO. : 23G280
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-56349-1	380-56349-1MS	380-56349-1MSD
LAB SAMPLE ID	: G280-01	G280-01M	G280-01S
LAB FILE ID	: EG28008A	EG28009A	EG28010A
DATE PREPARED	: 07/28/23 13:33	07/28/23 14:12	07/28/23 14:49
DATE ANALYZED	: 07/28/23 13:33	07/28/23 14:12	07/28/23 14:49
PREP BATCH	: 23VG39G17	23VG39G17	23VG39G17
CALIBRATION REF:	EG28004A	EG28004A	EG28004A

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	0.450	90	0.500	0.439	88	2	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0421	105	0.0400	0.0405	101	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-56349

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23G280



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-56349

SDG : 23G280

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

A total of two(2) water samples were received on 07/27/23 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. DSH002WB - 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) LCS was analyzed. Percent recovery for Diesel was within LCS QC limits in DSH002WL. 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. Diesel was within MS QC limits in 23G259-01M/23G259-01S. Refer to Matrix QC summary form for details.

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: 380-56349

SDG : 23G280

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of two(2) water samples were received on 07/27/23 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. DSH002WB - 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) LCS was analyzed. Percent recovery for JP5 was within LCS QC limits in J5H002WL. 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. JP5 was within MS QC limits in 23G259-01M/23G259-01S. Refer to Matrix QC summary form for details.

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: 380-56349

SDG : 23G280

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of two(2) water samples were received on 07/27/23 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. DSH002WB - 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) LCS was analyzed. Percent recovery for JP8 was within LCS QC limits in J8H002WL. 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. JP8 was within MS QC limits in 23G259-01M/23G259-01S. Refer to Matrix QC summary form for details.

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
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	07/24/23 10:00
Project	: 380-56349	Date Received:	07/27/23
Batch No.	: 23G280	Date Extracted:	08/01/23 12:15
Sample ID	: 380-56349-1	Date Analyzed:	08/02/23 17:14
Lab Samp ID:	23G280-01	Dilution Factor:	1
Lab File ID:	LH02022A	Matrix:	WATER
Ext Btch ID:	23DSH002W	% Moisture:	NA
Calib. Ref.:	LH02004A	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	0.363	0.500	73	60-130
Hexacosane	0.116	0.125	92	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 : RGalan

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/24/23 10:00
Project : 380-56349	Date Received: 07/27/23
Batch No. : 23G280	Date Extracted: 08/01/23 12:15
Sample ID : 380-56349-1	Date Analyzed: 08/02/23 17:14
Lab Samp ID: 23G280-01	Dilution Factor: 1
Lab File ID: LH02022A	Matrix: WATER
Ext Btch ID: 23DSH002W	% Moisture: NA
Calib. Ref.: LH02005A	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	0.363	0.500	73	60-130
Hexacosane	0.116	0.125	92	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 : RGalan Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/24/23 10:30
Project : 380-56349	Date Received: 07/27/23
Batch No. : 23G280	Date Extracted: 08/01/23 12:15
Sample ID : 380-56349-2	Date Analyzed: 08/02/23 17:51
Lab Samp ID: 23G280-02	Dilution Factor: 1
Lab File ID: LH02023A	Matrix: WATER
Ext Btch ID: 23DSH002W	% Moisture: NA
Calib. Ref.: LH02003A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.025	0.012	
Motor Oil	ND	0.049	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.367	0.490	75	60-130
Hexacosane	0.109	0.123	89	60-130

Notes:

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1020ml	Final Volume : 5ml
Prepared by : RGalan	Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	07/24/23 10:30
Project	: 380-56349	Date Received:	07/27/23
Batch No.	: 23G280	Date Extracted:	08/01/23 12:15
Sample ID	: 380-56349-2	Date Analyzed:	08/02/23 17:51
Lab Samp ID:	23G280-02	Dilution Factor:	1
Lab File ID:	LH02023A	Matrix:	WATER
Ext Btch ID:	23DSH002W	% Moisture:	NA
Calib. Ref.:	LH02004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.049	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.367	0.490	75	60-130
Hexacosane	0.109	0.123	89	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1020ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	07/24/23 10:30
Project	: 380-56349	Date Received:	07/27/23
Batch No.	: 23G280	Date Extracted:	08/01/23 12:15
Sample ID	: 380-56349-2	Date Analyzed:	08/02/23 17:51
Lab Samp ID:	23G280-02	Dilution Factor:	1
Lab File ID:	LH02023A	Matrix:	WATER
Ext Btch ID:	23DSH002W	% Moisture:	NA
Calib. Ref.:	LH02005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.049	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.367	0.490	75	60-130
Hexacosane	0.109	0.123	89	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1020ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 08/01/23 12:15
Project : 380-56349	Date Received: 08/01/23
Batch No. : 23G280	Date Extracted: 08/01/23 12:15
Sample ID : MBLK1W	Date Analyzed: 08/02/23 13:10
Lab Samp ID: DSH002WB	Dilution Factor: 1
Lab File ID: LH02009A	Matrix: WATER
Ext Btch ID: 23DSH002W	% Moisture: NA
Calib. Ref.: LH02003A	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	0.348	0.500	70	60-130
Hexacosane	0.117	0.125	93	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 : RGalan	Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-56349
BATCH NO. : 23G280
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSH002WB DSH002WL
LAB FILE ID : LH02009A LH02010A
DATE PREPARED : 08/01/23 12:15 08/01/23 12:15
DATE ANALYZED : 08/02/23 13:10 08/02/23 13:29
PREP BATCH : 23DSH002W 23DSH002W
CALIBRATION REF: LH02003A LH02003A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Diesel	ND	2.50	2.42	97	50-130

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.423	85	60-130
Hexacosane	0.125	0.125	100	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-56565
BATCH NO. : 23G259
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-56565-1	380-56565-1MS	380-56565-1MSD
LAB SAMPLE ID	: 23G259-01	23G259-01M	23G259-01S
LAB FILE ID	: LH02013A	LH02014A	LH02015A
DATE PREPARED	: 08/01/23 12:15	08/01/23 12:15	08/01/23 12:15
DATE ANALYZED	: 08/02/23 14:25	08/02/23 14:44	08/02/23 15:02
PREP BATCH	: 23DSH002W	23DSH002W	23DSH002W
CALIBRATION REF:	LH02003A	LH02003A	LH02003A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.55	2.45	96	2.55	2.38	93	3	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.510	0.410	80	0.510	0.396	78	60-130
Hexacosane	0.127	0.125	98	0.127	0.118	93	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	08/01/23 12:15
Project	: 380-56349	Date Received:	08/01/23
Batch No.	: 23G280	Date Extracted:	08/01/23 12:15
Sample ID	: MBLK1W	Date Analyzed:	08/02/23 13:10
Lab Samp ID:	DSH002WB	Dilution Factor:	1
Lab File ID:	LH02009A	Matrix:	WATER
Ext Btch ID:	23DSH002W	% Moisture:	NA
Calib. Ref.:	LH02004A	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	0.348	0.500	70	60-130
Hexacosane	0.117	0.125	93	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 : RGalán

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-56349
BATCH NO. : 23G280
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSH002WB J5H002WL
LAB FILE ID : LH02009A LH02011A
DATE PREPARED : 08/01/23 12:15 08/01/23 12:15
DATE ANALYZED : 08/02/23 13:10 08/02/23 13:47
PREP BATCH : 23DSH002W 23DSH002W
CALIBRATION REF: LH02004A LH02004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP5	ND	2.50	1.69	68	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.402	80	60-130
Hexacosane	0.125	0.112	90	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-56565
BATCH NO. : 23G259
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-56565-1	380-56565-1MS	380-56565-1MSD
LAB SAMPLE ID	: 23G259-01	23G259-01M	23G259-01S
LAB FILE ID	: LH02013A	LH02016A	LH02017A
DATE PREPARED	: 08/01/23 12:15	08/01/23 12:15	08/01/23 12:15
DATE ANALYZED	: 08/02/23 14:25	08/02/23 15:21	08/02/23 15:40
PREP BATCH	: 23DSH002W	23DSH002W	23DSH002W
CALIBRATION REF:	LH02004A	LH02004A	LH02004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.80	2.05	73	2.80	2.22	79	8	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.560	0.477	85	0.560	0.453	81	60-130
Hexacosane	0.140	0.126	90	0.140	0.128	91	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 08/01/23 12:15
Project : 380-56349	Date Received: 08/01/23
Batch No. : 23G280	Date Extracted: 08/01/23 12:15
Sample ID : MBLK1W	Date Analyzed: 08/02/23 13:10
Lab Samp ID: DSH002WB	Dilution Factor: 1
Lab File ID: LH02009A	Matrix: WATER
Ext Btch ID: 23DSH002W	% Moisture: NA
Calib. Ref.: LH02005A	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	0.348	0.500	70	60-130
Hexacosane	0.117	0.125	93	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 : RGalan

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-56349
BATCH NO. : 23G280
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSH002WB J8H002WL
LAB FILE ID : LH02009A LH02012A
DATE PREPARED : 08/01/23 12:15 08/01/23 12:15
DATE ANALYZED : 08/02/23 13:10 08/02/23 14:06
PREP BATCH : 23DSH002W 23DSH002W
CALIBRATION REF: LH02005A LH02005A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP8	ND	2.50	2.39	96	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.469	94	60-130
Hexacosane	0.125	0.105	84	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-56565
BATCH NO. : 23G259
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-56565-1	380-56565-1MS	380-56565-1MSD
LAB SAMPLE ID	: 23G259-01	23G259-01M	23G259-01S
LAB FILE ID	: LH02013A	LH02018A	LH02019A
DATE PREPARED	: 08/01/23 12:15	08/01/23 12:15	08/01/23 12:15
DATE ANALYZED	: 08/02/23 14:25	08/02/23 15:59	08/02/23 16:17
PREP BATCH	: 23DSH002W	23DSH002W	23DSH002W
CALIBRATION REF:	LH02005A	LH02005A	LH02005A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.80	3.16	113	2.85	3.08	108	3	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.560	0.606	108	0.570	0.525	92	60-130
Hexacosane	0.140	0.126	90	0.142	0.130	91	60-130

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

August 14, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-56349-1
Physis Project ID: 1407003-428

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 7/27/2023. 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,



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

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-428

RED-HILL Project # 38001111 Job # 380-56349-1

Total Samples: 2

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
108657	AIEA GULCH WELLS PUMP 2	380-56349-1	7/24/2023	10:00	Samplewater	Not Specified
108658	AIEA WELLS PUMPS 1&2 (260)	380-56349-2	7/24/2023	10:30	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.

BIANALYTICALS

REPORT

TERRA AURA ENVIRONMENTAL LABORATORIES, INC.

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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 108657-R1 AIEA GULCH WELLS PUMP 2 380-5 Matrix: Samplewater											
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-42010	28-Jul-23	13-Aug-23
Sample ID: 108658-R1 AIEA WELLS PUMPS 1&2 (260) 380- Matrix: Samplewater											
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-42010	28-Jul-23	13-Aug-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 108657-R1	AIEA GULCH WELLS PUMP 2 380-5 Matrix: Samplewater						Sampled:	24-Jul-23 10:00	Received:	27-Jul-23	
(d10-Acenaphthene)	EPA 625.1	% Recovery	100	1			Total	O-42010	28-Jul-23	13-Aug-23	
(d10-Phenanthrene)	EPA 625.1	% Recovery	89	1			Total	O-42010	28-Jul-23	13-Aug-23	
(d12-Chrysene)	EPA 625.1	% Recovery	81	1			Total	O-42010	28-Jul-23	13-Aug-23	
(d12-Perylene)	EPA 625.1	% Recovery	69	1			Total	O-42010	28-Jul-23	13-Aug-23	
(d8-Naphthalene)	EPA 625.1	% Recovery	93	1			Total	O-42010	28-Jul-23	13-Aug-23	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23	
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-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-42010	28-Jul-23	13-Aug-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
Sample ID: 108658-R1	AIEA WELLS PUMPS 1&2 (260) 380- Matrix: Samplewater						Sampled:	24-Jul-23 10:30	Received:	27-Jul-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	70	1			Total	O-42010	28-Jul-23	13-Aug-23		
(d10-Phenanthrene)	EPA 625.1	% Recovery	79	1			Total	O-42010	28-Jul-23	13-Aug-23		
(d12-Chrysene)	EPA 625.1	% Recovery	89	1			Total	O-42010	28-Jul-23	13-Aug-23		
(d12-Perylene)	EPA 625.1	% Recovery	70	1			Total	O-42010	28-Jul-23	13-Aug-23		
(d8-Naphthalene)	EPA 625.1	% Recovery	120	1			Total	O-42010	28-Jul-23	13-Aug-23		
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-23		
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-42010	28-Jul-23	13-Aug-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-42010	28-Jul-23	13-Aug-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42010	28-Jul-23	13-Aug-23



QUALITY CONTROL REPORT

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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODE
									%	LIMITS	%	LIMITS	
Sample ID: 108656-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-42010			Prepared: 28-Jul-23		Analyzed: 13-Aug-23			
Disalicylideneprapanediamin	Total	ND	1	0.05	0.1	µg/L							
Sample ID: 108656-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-42010			Prepared: 28-Jul-23		Analyzed: 13-Aug-23			
Disalicylideneprapanediamin	Total	34.7	1	0.05	0.1	µg/L	50	0	69	50 - 150%	PASS		
Sample ID: 108656-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-42010			Prepared: 28-Jul-23		Analyzed: 13-Aug-23			
Disalicylideneprapanediamin	Total	34.2	1	0.05	0.1	µg/L	50	0	68	50 - 150%	PASS	1	30 PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 108656-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
		Method: EPA 625.1				Batch ID: O-42010	Prepared: 28-Jul-23		Analyzed: 13-Aug-23		
(d10-Acenaphthene)	Total	90	1			% Recovery	100	90	27 - 133%	PASS	
(d10-Phenanthrene)	Total	82	1			% Recovery	100	82	43 - 129%	PASS	
(d12-Chrysene)	Total	119	1			% Recovery	100	119	52 - 144%	PASS	
(d12-Perylene)	Total	97	1			% Recovery	100	97	36 - 161%	PASS	
(d8-Naphthalene)	Total	80	1			% Recovery	100	80	25 - 125%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005						µg/L
1-Methylphenanthrene	Total	ND	1	0.001	0.005						µg/L
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005						µg/L
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005						µg/L
2-Methylnaphthalene	Total	ND	1	0.001	0.005						µg/L
Acenaphthene	Total	ND	1	0.001	0.005						µg/L
Acenaphthylene	Total	ND	1	0.001	0.005						µg/L
Anthracene	Total	ND	1	0.001	0.005						µg/L
Benz[a]anthracene	Total	ND	1	0.001	0.005						µg/L
Benzo[a]pyrene	Total	ND	1	0.001	0.005						µg/L
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005						µg/L
Benzo[e]pyrene	Total	ND	1	0.001	0.005						µg/L
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005						µg/L
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005						µg/L
Biphenyl	Total	ND	1	0.001	0.005						µg/L
Chrysene	Total	ND	1	0.001	0.005						µg/L
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005						µg/L
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005						µg/L
Dibenzothiophene	Total	ND	1	0.001	0.005						µg/L

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
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: 108656-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-42010			Prepared: 28-Jul-23		Analyzed: 13-Aug-23					
(d10-Acenaphthene)	Total	84	1			% Recovery	100	0	84	27 - 133%	PASS	
(d10-Phenanthrene)	Total	71	1			% Recovery	100	0	71	43 - 129%	PASS	
(d12-Chrysene)	Total	66	1			% Recovery	100	0	66	52 - 144%	PASS	
(d12-Perylene)	Total	69	1			% Recovery	100	0	69	36 - 161%	PASS	
(d8-Naphthalene)	Total	64	1			% Recovery	100	0	64	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.561	1	0.001	0.005	µg/L	0.5	0	112	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.508	1	0.001	0.005	µg/L	0.5	0	102	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.435	1	0.001	0.005	µg/L	0.5	0	87	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.552	1	0.001	0.005	µg/L	0.5	0	110	47 - 130%	PASS	
Acenaphthene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	53 - 131%	PASS	
Acenaphthylene	Total	0.618	1	0.001	0.005	µg/L	0.5	0	124	43 - 140%	PASS	
Anthracene	Total	0.529	1	0.001	0.005	µg/L	0.5	0	106	58 - 135%	PASS	
Benz[a]anthracene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.505	1	0.001	0.005	µg/L	0.5	0	101	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.575	1	0.001	0.005	µg/L	0.5	0	115	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.588	1	0.001	0.005	µg/L	0.5	0	118	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.465	1	0.001	0.005	µg/L	0.5	0	93	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.557	1	0.001	0.005	µg/L	0.5	0	111	56 - 145%	PASS	
Biphenyl	Total	0.678	1	0.001	0.005	µg/L	1	0	68	56 - 119%	PASS	
Chrysene	Total	0.425	1	0.001	0.005	µg/L	0.5	0	85	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.567	1	0.001	0.005	µg/L	0.5	0	113	50 - 150%	PASS	
Dibenzothiophene	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	46 - 126%	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	
Fluoranthene	Total	0.563	1	0.001	0.005	µg/L	0.5	0	113	60 - 146%	PASS		
Fluorene	Total	0.503	1	0.001	0.005	µg/L	0.5	0	101	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.506	1	0.001	0.005	µg/L	0.5	0	101	50 - 151%	PASS		
Naphthalene	Total	0.432	1	0.001	0.005	µg/L	0.5	0	86	41 - 126%	PASS		
Perylene	Total	0.429	1	0.001	0.005	µg/L	0.5	0	86	48 - 141%	PASS		
Phenanthrene	Total	0.492	1	0.001	0.005	µg/L	0.5	0	98	67 - 127%	PASS		
Pyrene	Total	0.532	1	0.001	0.005	µg/L	0.5	0	106	54 - 156%	PASS		

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Sample ID: 108656-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:			
		Method: EPA 625.1			Batch ID: O-42010			Prepared: 28-Jul-23			Analyzed: 13-Aug-23			
(d10-Acenaphthene)	Total	83	1			% Recovery	100	0	83	27 - 133%	PASS	1	30	PASS
(d10-Phenanthrene)	Total	76	1			% Recovery	100	0	76	43 - 129%	PASS	7	30	PASS
(d12-Chrysene)	Total	62	1			% Recovery	100	0	62	52 - 144%	PASS	6	30	PASS
(d12-Perylene)	Total	70	1			% Recovery	100	0	70	36 - 161%	PASS	1	30	PASS
(d8-Naphthalene)	Total	67	1			% Recovery	100	0	67	25 - 125%	PASS	5	30	PASS
1-Methylnaphthalene	Total	0.565	1	0.001	0.005	µg/L	0.5	0	113	31 - 128%	PASS	1	30	PASS
1-Methylphenanthrene	Total	0.55	1	0.001	0.005	µg/L	0.5	0	110	66 - 127%	PASS	8	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.482	1	0.001	0.005	µg/L	0.5	0	96	55 - 122%	PASS	7	30	PASS
2,6-Dimethylnaphthalene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	48 - 120%	PASS	8	30	PASS
2-Methylnaphthalene	Total	0.548	1	0.001	0.005	µg/L	0.5	0	110	47 - 130%	PASS	0	30	PASS
Acenaphthene	Total	0.437	1	0.001	0.005	µg/L	0.5	0	87	53 - 131%	PASS	1	30	PASS
Acenaphthylene	Total	0.543	1	0.001	0.005	µg/L	0.5	0	109	43 - 140%	PASS	13	30	PASS
Anthracene	Total	0.476	1	0.001	0.005	µg/L	0.5	0	95	58 - 135%	PASS	11	30	PASS
Benz[a]anthracene	Total	0.484	1	0.001	0.005	µg/L	0.5	0	97	55 - 145%	PASS	6	30	PASS
Benzo[a]pyrene	Total	0.406	1	0.001	0.005	µg/L	0.5	0	81	51 - 143%	PASS	22	30	PASS
Benzo[b]fluoranthene	Total	0.57	1	0.001	0.005	µg/L	0.5	0	114	46 - 165%	PASS	1	30	PASS
Benzo[e]pyrene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	42 - 152%	PASS	19	30	PASS
Benzo[g,h,i]perylene	Total	0.462	1	0.001	0.005	µg/L	0.5	0	92	63 - 133%	PASS	1	30	PASS
Benzo[k]fluoranthene	Total	0.521	1	0.001	0.005	µg/L	0.5	0	104	56 - 145%	PASS	7	30	PASS
Biphenyl	Total	0.678	1	0.001	0.005	µg/L	1	0	68	56 - 119%	PASS	0	30	PASS
Chrysene	Total	0.418	1	0.001	0.005	µg/L	0.5	0	84	56 - 141%	PASS	1	30	PASS
Dibenz[a,h]anthracene	Total	0.411	1	0.001	0.005	µg/L	0.5	0	82	55 - 150%	PASS	23	30	PASS
Dibenzo[a,l]pyrene	Total	0.417	1	0.001	0.005	µg/L	0.5	0	83	50 - 150%	PASS	31	30	FAIL R
Dibenzothiophene	Total	0.482	1	0.001	0.005	µg/L	0.5	0	96	46 - 126%	PASS	9	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		
Fluoranthene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	60 - 146%	PASS	9	30	PASS
Fluorene	Total	0.402	1	0.001	0.005	µg/L	0.5	0	80	58 - 131%	PASS	23	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.434	1	0.001	0.005	µg/L	0.5	0	87	50 - 151%	PASS	15	30	PASS
Naphthalene	Total	0.452	1	0.001	0.005	µg/L	0.5	0	90	41 - 126%	PASS	5	30	PASS
Perylene	Total	0.428	1	0.001	0.005	µg/L	0.5	0	86	48 - 141%	PASS	0	30	PASS
Phenanthrene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	67 - 127%	PASS	10	30	PASS
Pyrene	Total	0.609	1	0.001	0.005	µg/L	0.5	0	122	54 - 156%	PASS	14	30	PASS

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PHYSIS

TENTATIVELY

IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 108657

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.7670	1.8251	1111	Anthracene-D10	1517-22-2	83
10.3681	1.1334	690	2-Pentene, 2,4-dimethyl-	625-65-0	85
10.3680	1.1212	683	Cyclohexane, nitro-	1122-60-7	85
10.0227	0.2719	166	Hexanal, 2-methyl-	925-54-2	84

Concentration estimated using the response for Anthracene-d10

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Sample ID: 108658

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.7675	2.2722	1111	Anthracene-D10	1517-22-2	83
10.3684	2.1089	1031	Cyclohexane, nitro-	1122-60-7	87
10.0231	0.8052	394	Allyl isovalerate	2835-39-4	81

Concentration estimated using the response for Anthracene-d10

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Sample ID: Lab Blank B1_42010

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.7709	1.5585	1111	Anthracene-D10	1517-22-2	84
10.3686	2.5554	1822	Cyclohexane, nitro-	1122-60-7	90
10.0240	0.9764	696	Hydroperoxide, 1-ethylbutyl	24254-56-6	87
10.1437	0.8716	621	Hydroperoxide, 1-methylpentyl	24254-55-5	88

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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Chain of Custody Record



Client Information (Sub Contract Lab)
 Client Contact: **Arada, Rachelle**
 Shipping/Receiving: **Rachelle.Arada@eurofins.com**
 Company: **Physis Environmental Laboratories**
 Address: **1904 Wright Circle,**
 City: **Anaheim**
 State, Zip: **CA, 92806**
 Phone: **PO #:**
 Email: **WO #:**
 Project Name: **RED-HILL**
 Siter: **Honolulu BWS Sites**
 Project #: **38001111**
 SSONW: **SSQW**

Sampler:
Phone:
E-Mail:
Lab P/N:
Carrier Tracking No(s):
State of Origin:
Accreditations Required (See note):
State - Hawaii
380-66168-1
Hawaii
380-66349-1
Job #:
380-66349-1
Page:
Page 1 of 1
COC No:
380-66168-1

Due Date Requested:
8/9/2023
TAT Requested (days):
Analysis Requested

Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Benzene, Diesel, Oil, etc.)	Preservation Code: (BTT, TMS, AML)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
AIEA GULCH WELLS PUMP 2 (380-66349-1)	7/24/23	10:00		Water			X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) (380-66349-2)	7/24/23	10:30		Water			X	2	See Attached Instructions

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

Uncertified Possible Hazard Identification

Deliverable Requested: I, II, III, IV, Other (specify) **Primary Deliverable Rank: 2**

Empty Kit Relinquished by: _____ Date: _____

Relinquished by: *[Signature]* Date/Time: **7/27/23 12:48** Company: **EEA**

Relinquished by: *[Signature]* Date/Time: _____ Company: _____

Relinquished by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: Yes No Custody Seal No.: _____

Received by: *[Signature]* Date/Time: **7/27/23 12:48** Company: **EEA**

Cooler Temperature(s) °C and Other Remarks: _____

Method of Shipment: _____

Special Instructions/QC 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

Project Iteration ID: 1407003-428
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-56349-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: PA
2. Date Received: 7/27/23
3. Time Received: 12:15
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)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 3.9
 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: DL

Sample Integrity Upon Receipt:

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

Notes:

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

Chain of Custody Record



Environment Testing
America

Client Information		Lab PM Arada, Rachelle		Carrier Tracking No(s) 380-27941-2757 2										
Client Contact: Dr. Ron Fenstermacher		E-Mail Rachelle.Arada@et.eurofins.com		Page Page 2 of 2										
Company City & County of Honolulu		PWSID		Job #										
Address 630 South Berelania Street, Chemistry Lab		Due Date Requested:		Total Number of Containers										
City Honolulu		TAT Requested (days):		Analysis Requested										
State, Zip HI, 96843		Compliance Project: <input type="checkbox"/> No		537.1_DW_PREC - 537.1 Full List										
Phone 808-748-5091 (tel)		PO #: C20525101 exp 05312023		535.2_PREC - (MOD) 525plus PLUS TICS										
Email rfenstermacher@hbws.org		WO #		SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil										
Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill		Project #: 38001111		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)										
Site		SSOW#		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICS										
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	R	R	RA	RA	Y	N	Special Instructions/Note:	
MOANALUA WELLS				Water										
AIEA GULCH WELLS PUMP2	7/24/23	1000	G	Water			Z	Y	Z				(F52A) 2725	
AIEA WELLS PUMPS 1&2 (260)	7/24/23	1030	G	Water			Z	Y	Z				Fdx 772543429746	
HALAWA WELLS UNITS 1&2				Water									Pump 2	
FB MOANALUA WELLS				Water									(F52A) 25123	
FB AIEA GULCH WELLS PUMP2	7/24/23	1000		Water			Z						Fdx 772543430625	
FB AIEA WELLS PUMPS 1&2 (260)	7/24/23	1030		Water			Z							
FB HALAWA WELLS UNITS 1&2				Water										
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological													Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by Relinquished by _____ Date/Time _____ Relinquished by _____ Date/Time _____ Relinquished by _____ Date/Time _____													Method of Shipment: Fdx 772543430625 Date/Time: 7/24/23 1016 Company: LEAP	
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temperature(s) °C and Other Remarks: (F52A) 3.1/29 get-60-20													Date/Time: _____ Company: _____	



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-56349-1

Login Number: 56349
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	One 8015 vial recd. broken; refer to NCM for details.
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	

