

ANALYTICAL REPORT

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Tel: (626)386-1100

Laboratory Job ID: 380-22081-1
Client Project/Site: RED-HILL
Sampling Event: RUSH Weekly Red Hill

For:
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 308
Honolulu, Hawaii 96843

Attn: Mr. Erwin Kawata



Authorized for release by:
10/26/2022 4:58:34 PM
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Results relate only to the items tested and the sample(s) as received by the laboratory.

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)



Kathleen Robb
Client Program Manager
10/26/2022 4:58:34 PM



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	17
Surrogate Summary	19
QC Sample Results	23
QC Association Summary	38
Lab Chronicle	40
Certification Summary	42
Method Summary	44
Sample Summary	45
Subcontract Data	46
Chain of Custody	105
Receipt Checklists	114



Definitions/Glossary

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

Job ID: 380-22081-1

Qualifiers

GC/MS Semi VOA

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

GC/MS Semi VOA TICs

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

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: 380-22081-1

Job ID: 380-22081-1

Laboratory: Eurofins Eaton Monrovia

Narrative

Job Narrative 380-22081-1

Comments

No additional comments.

Receipt

The samples were received on 9/27/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.3° C and 2.8° C.

GC/MS Semi VOA

Method 525.2: Internal standard (ISTD) response for the following sample was outside of acceptance limits: (380-22076-D-1-B DU). The sample(s) was not re-analyzed due to: non of the analytes are quantitate based on Terphenyl-d14 .

No additional analytical or quality issues were noted, other than those described above or 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 Diesel LL (EAL) and Motor Oil, 8015 Gas (Purgeable) LL (EAL): 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: 380-22081-1

Client Sample ID: AIEA GULCH WELLS PUMP 1
(331-201-TP071)
PWSID Number: HI0000331

Lab Sample ID: 380-22081-1

No Detections.

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

Lab Sample ID: 380-22081-2

No Detections.

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

Lab Sample ID: 380-22081-3

No Detections.

Client Sample ID: TB AIEA GULCH WELLS PUMP 1

Lab Sample ID: 380-22081-4

No Detections.

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-22081-5

No Detections.

Client Sample ID: TB AIEA WELLS PUMPS 1&2

Lab Sample ID: 380-22081-6

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-22081-1

**Client Sample ID: AIEA GULCH WELLS PUMP 1
(331-201-TP071)**

Lab Sample ID: 380-22081-1

Date Collected: 09/26/22 10:25

Matrix: Drinking Water

Date Received: 09/27/22 18:05

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
2,4'-DDE	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
2,4'-DDT	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
2,4-Dinitrotoluene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
2,6-Dinitrotoluene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
4,4'-DDD	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
4,4'-DDE	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
4,4'-DDT	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Acenaphthene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Acenaphthylene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Acetochlor	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Alachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
alpha-BHC	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
alpha-Chlordane	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Anthracene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:25	1
Atrazine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Benz(a)anthracene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Benzo[a]pyrene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:25	1
Benzo[b]fluoranthene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:25	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Benzo[k]fluoranthene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:25	1
beta-BHC	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Bromacil	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Butachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Butylbenzylphthalate	ND		0.49	ug/L		10/05/22 09:03	10/06/22 14:25	1
Caffeine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Chlorobenzilate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Chloroneb	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Chlorothalonil (Draconil, Bravo)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Chlorpyrifos	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Chrysene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:25	1
delta-BHC	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		10/05/22 09:03	10/06/22 14:25	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		10/05/22 09:03	10/06/22 14:25	1
Diazinon (Qualitative)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Diclorvos (DDVP)	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Dieldrin	ND		0.20	ug/L		10/05/22 09:03	10/06/22 14:25	1
Diethylphthalate	ND		0.49	ug/L		10/05/22 09:03	10/06/22 14:25	1
Dimethoate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Dimethylphthalate	ND		0.49	ug/L		10/05/22 09:03	10/06/22 14:25	1
Di-n-butyl phthalate	ND		0.98	ug/L		10/05/22 09:03	10/06/22 14:25	1
Di-n-octyl phthalate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Endosulfan I (Alpha)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Endosulfan II (Beta)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Endosulfan sulfate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Endrin	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Endrin aldehyde	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1

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Client Sample Results

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

Job ID: 380-22081-1

**Client Sample ID: AIEA GULCH WELLS PUMP 1
(331-201-TP071)**

Lab Sample ID: 380-22081-1

Date Collected: 09/26/22 10:25

Matrix: Drinking Water

Date Received: 09/27/22 18:05

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Fluoranthene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Fluorene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
gamma-Chlordane	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Heptachlor	ND		0.039	ug/L		10/05/22 09:03	10/06/22 14:25	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Hexachlorobenzene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Isophorone	ND		0.49	ug/L		10/05/22 09:03	10/06/22 14:25	1
Lindane	ND		0.039	ug/L		10/05/22 09:03	10/06/22 14:25	1
Malathion	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Methoxychlor	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Metolachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Metribuzin	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Molinate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Naphthalene	ND		0.30	ug/L		10/05/22 09:03	10/06/22 14:25	1
Parathion	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Pendimethalin (Penoxaline)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		10/05/22 09:03	10/06/22 14:25	1
Phenanthrene	ND		0.039	ug/L		10/05/22 09:03	10/06/22 14:25	1
Propachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Pyrene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Simazine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Terbacil	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Terbutylazine	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1
Thiobencarb	ND		0.20	ug/L		10/05/22 09:03	10/06/22 14:25	1
trans-Nonachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:25	1
Trifluralin	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:25	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L				10/05/22 09:03	10/06/22 14:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	97		70 - 130	10/05/22 09:03	10/06/22 14:25	1
Triphenylphosphate	101		70 - 130	10/05/22 09:03	10/06/22 14:25	1
Perylene-d12	96		70 - 130	10/05/22 09:03	10/06/22 14:25	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		09/29/22 00:00	10/05/22 11:38	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Acenaphthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1

Eurofins Eaton Monrovia

Client Sample Results

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

Job ID: 380-22081-1

**Client Sample ID: AIEA GULCH WELLS PUMP 1
(331-201-TP071)**

Lab Sample ID: 380-22081-1

Date Collected: 09/26/22 10:25

Matrix: Drinking Water

Date Received: 09/27/22 18:05

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[a]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Biphenyl	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Chrysene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/29/22 00:00	10/05/22 11:38	1
Fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Fluorene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Naphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Perylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Phenanthrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1
Pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 11:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	98		45 - 118	09/29/22 00:00	10/05/22 11:38	1
(d10-Phenanthrene)	98		56 - 123	09/29/22 00:00	10/05/22 11:38	1
(d12-Chrysene)	89		36 - 142	09/29/22 00:00	10/05/22 11:38	1
(d12-Perylene)	83		36 - 161	09/29/22 00:00	10/05/22 11:38	1
(d8-Naphthalene)	76		20 - 112	09/29/22 00:00	10/05/22 11:38	1

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.026		mg/L			10/03/22 15:17	1
MOTOR OIL	ND	U	0.052		mg/L			10/03/22 15:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	62		60 - 130		10/03/22 15:17	1
HEXACOSANE	76		60 - 130		10/03/22 15:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			09/29/22 14:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	89		60 - 140		09/29/22 14:12	1

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

Lab Sample ID: 380-22081-2

Date Collected: 09/26/22 11:01

Matrix: Drinking Water

Date Received: 09/27/22 18:05

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1

Eurofins Eaton Monrovia

Client Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22081-2

Date Collected: 09/26/22 11:01

Matrix: Drinking Water

Date Received: 09/27/22 18:05

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDE	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
2,4'-DDT	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
2,4-Dinitrotoluene	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
2,6-Dinitrotoluene	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
4,4'-DDD	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
4,4'-DDE	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
4,4'-DDT	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Acenaphthene	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Acenaphthylene	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Acetochlor	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Alachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
alpha-BHC	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
alpha-Chlordane	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Anthracene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:45	1
Atrazine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Benz(a)anthracene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Benzo[a]pyrene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:45	1
Benzo[b]fluoranthene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:45	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Benzo[k]fluoranthene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:45	1
beta-BHC	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Bromacil	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Butachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Butylbenzylphthalate	ND		0.49	ug/L		10/05/22 09:03	10/06/22 14:45	1
Caffeine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Chlorobenzilate	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Chloroneb	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Chlorpyrifos	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Chrysene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 14:45	1
delta-BHC	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		10/05/22 09:03	10/06/22 14:45	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		10/05/22 09:03	10/06/22 14:45	1
Diazinon (Qualitative)	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Diclorvos (DDVP)	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Dieldrin	ND		0.20	ug/L		10/05/22 09:03	10/06/22 14:45	1
Diethylphthalate	ND		0.49	ug/L		10/05/22 09:03	10/06/22 14:45	1
Dimethoate	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Dimethylphthalate	ND		0.49	ug/L		10/05/22 09:03	10/06/22 14:45	1
Di-n-butyl phthalate	ND		0.99	ug/L		10/05/22 09:03	10/06/22 14:45	1
Di-n-octyl phthalate	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Endosulfan I (Alpha)	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Endosulfan II (Beta)	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Endosulfan sulfate	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Endrin	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Endrin aldehyde	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
EPTC	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1

Eurofins Eaton Monrovia

Client Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22081-2

Date Collected: 09/26/22 11:01

Matrix: Drinking Water

Date Received: 09/27/22 18:05

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Fluorene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
gamma-Chlordane	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Heptachlor	ND		0.040	ug/L		10/05/22 09:03	10/06/22 14:45	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Hexachlorobenzene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Isophorone	ND		0.49	ug/L		10/05/22 09:03	10/06/22 14:45	1
Lindane	ND		0.040	ug/L		10/05/22 09:03	10/06/22 14:45	1
Malathion	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Methoxychlor	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Metolachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Metribuzin	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Molinate	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Naphthalene	ND		0.30	ug/L		10/05/22 09:03	10/06/22 14:45	1
Parathion	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		10/05/22 09:03	10/06/22 14:45	1
Phenanthrene	ND		0.040	ug/L		10/05/22 09:03	10/06/22 14:45	1
Propachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Pyrene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Simazine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Terbacil	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Terbutylazine	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1
Thiobencarb	ND		0.20	ug/L		10/05/22 09:03	10/06/22 14:45	1
trans-Nonachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:45	1
Trifluralin	ND		0.099	ug/L		10/05/22 09:03	10/06/22 14:45	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L				10/05/22 09:03	10/06/22 14:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	93		70 - 130	10/05/22 09:03	10/06/22 14:45	1
Triphenylphosphate	104		70 - 130	10/05/22 09:03	10/06/22 14:45	1
Perylene-d12	93		70 - 130	10/05/22 09:03	10/06/22 14:45	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		09/29/22 00:00	10/05/22 13:22	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Acenaphthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1

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Client Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22081-2

Date Collected: 09/26/22 11:01

Matrix: Drinking Water

Date Received: 09/27/22 18:05

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[b]fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Biphenyl	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Chrysene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/29/22 00:00	10/05/22 13:22	1
Fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Fluorene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Naphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Perylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Phenanthrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1
Pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 13:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	66		45 - 118	09/29/22 00:00	10/05/22 13:22	1
(d10-Phenanthrene)	95		56 - 123	09/29/22 00:00	10/05/22 13:22	1
(d12-Chrysene)	92		36 - 142	09/29/22 00:00	10/05/22 13:22	1
(d12-Perylene)	82		36 - 161	09/29/22 00:00	10/05/22 13:22	1
(d8-Naphthalene)	68		20 - 112	09/29/22 00:00	10/05/22 13:22	1

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.026		mg/L			10/03/22 15:35	1
MOTOR OIL	ND	U	0.052		mg/L			10/03/22 15:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	67		60 - 130		10/03/22 15:35	1
HEXACOSANE	73		60 - 130		10/03/22 15:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			09/29/22 16:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	90		60 - 140		09/29/22 16:06	1

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

Lab Sample ID: 380-22081-3

Date Collected: 09/26/22 09:56

Matrix: Drinking Water

Date Received: 09/27/22 18:05

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.098		ug/L		10/05/22 09:03	10/06/22 15:05	1
2,4'-DDE	ND		0.098		ug/L		10/05/22 09:03	10/06/22 15:05	1

Eurofins Eaton Monrovia

Client Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22081-3

Date Collected: 09/26/22 09:56

Matrix: Drinking Water

Date Received: 09/27/22 18:05

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDT	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
2,4-Dinitrotoluene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
2,6-Dinitrotoluene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
4,4'-DDD	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
4,4'-DDE	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
4,4'-DDT	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Acenaphthene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Acenaphthylene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Acetochlor	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Alachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
alpha-BHC	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
alpha-Chlordane	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Anthracene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 15:05	1
Atrazine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Benz(a)anthracene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Benzo[a]pyrene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 15:05	1
Benzo[b]fluoranthene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 15:05	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Benzo[k]fluoranthene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 15:05	1
beta-BHC	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Bromacil	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Butachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Butylbenzylphthalate	ND		0.49	ug/L		10/05/22 09:03	10/06/22 15:05	1
Caffeine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Chlorobenzilate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Chloroneb	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Chlorothalonil (Draconil, Bravo)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Chlorpyrifos	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Chrysene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 15:05	1
delta-BHC	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		10/05/22 09:03	10/06/22 15:05	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		10/05/22 09:03	10/06/22 15:05	1
Diazinon (Qualitative)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Diclorvos (DDVP)	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Dieldrin	ND		0.20	ug/L		10/05/22 09:03	10/06/22 15:05	1
Diethylphthalate	ND		0.49	ug/L		10/05/22 09:03	10/06/22 15:05	1
Dimethoate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Dimethylphthalate	ND		0.49	ug/L		10/05/22 09:03	10/06/22 15:05	1
Di-n-butyl phthalate	ND		0.98	ug/L		10/05/22 09:03	10/06/22 15:05	1
Di-n-octyl phthalate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Endosulfan I (Alpha)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Endosulfan II (Beta)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Endosulfan sulfate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Endrin	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Endrin aldehyde	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
EPTC	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Fluoranthene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1

Eurofins Eaton Monrovia

Client Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22081-3

Date Collected: 09/26/22 09:56

Matrix: Drinking Water

Date Received: 09/27/22 18:05

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
gamma-Chlordane	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Heptachlor	ND		0.039	ug/L		10/05/22 09:03	10/06/22 15:05	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Hexachlorobenzene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Isophorone	ND		0.49	ug/L		10/05/22 09:03	10/06/22 15:05	1
Lindane	ND		0.039	ug/L		10/05/22 09:03	10/06/22 15:05	1
Malathion	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Methoxychlor	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Metolachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Metribuzin	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Molinate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Naphthalene	ND		0.30	ug/L		10/05/22 09:03	10/06/22 15:05	1
Parathion	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Pendimethalin (Penoxaline)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		10/05/22 09:03	10/06/22 15:05	1
Phenanthrene	ND		0.039	ug/L		10/05/22 09:03	10/06/22 15:05	1
Propachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Pyrene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Simazine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Terbacil	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Terbutylazine	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1
Thiobencarb	ND		0.20	ug/L		10/05/22 09:03	10/06/22 15:05	1
trans-Nonachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 15:05	1
Trifluralin	ND		0.098	ug/L		10/05/22 09:03	10/06/22 15:05	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L				10/05/22 09:03	10/06/22 15:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	92		70 - 130	10/05/22 09:03	10/06/22 15:05	1
Triphenylphosphate	101		70 - 130	10/05/22 09:03	10/06/22 15:05	1
Perylene-d12	92		70 - 130	10/05/22 09:03	10/06/22 15:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Acenaphthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1

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Client Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22081-3

Date Collected: 09/26/22 09:56

Matrix: Drinking Water

Date Received: 09/27/22 18:05

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[e]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Biphenyl	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Chrysene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/29/22 00:00	10/05/22 15:06	1
Fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Fluorene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Naphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Perylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Phenanthrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1
Pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 15:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	116		45 - 118	09/29/22 00:00	10/05/22 15:06	1
(d10-Phenanthrene)	90		56 - 123	09/29/22 00:00	10/05/22 15:06	1
(d12-Chrysene)	78		36 - 142	09/29/22 00:00	10/05/22 15:06	1
(d12-Perylene)	84		36 - 161	09/29/22 00:00	10/05/22 15:06	1
(d8-Naphthalene)	109		20 - 112	09/29/22 00:00	10/05/22 15:06	1

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.026		mg/L			10/03/22 15:54	1
MOTOR OIL	ND	U	0.052		mg/L			10/03/22 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	64		60 - 130		10/03/22 15:54	1
HEXACOSANE	74		60 - 130		10/03/22 15:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			09/29/22 16:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	90		60 - 140		09/29/22 16:44	1

Client Sample ID: TB AIEA GULCH WELLS PUMP 1

Lab Sample ID: 380-22081-4

Date Collected: 09/26/22 10:25

Matrix: Water

Date Received: 09/27/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			09/29/22 18:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	90		60 - 140		09/29/22 18:00	1

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Client Sample Results

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

Job ID: 380-22081-1

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-22081-5

Date Collected: 09/26/22 11:01

Matrix: Water

Date Received: 09/27/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			09/29/22 18:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	89		60 - 140					09/29/22 18:38	1

Client Sample ID: TB AIEA WELLS PUMPS 1&2

Lab Sample ID: 380-22081-6

Date Collected: 09/26/22 09:56

Matrix: Water

Date Received: 09/27/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			09/29/22 19:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	89		60 - 140					09/29/22 19:16	1

Action Limit Summary

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

Job ID: 380-22081-1

Client Sample ID: AIEA GULCH WELLS PUMP 1
(331-201-TP071)
PWSID Number: HI0000331

Lab Sample ID: 380-22081-1

Compliance Check

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

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

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

Lab Sample ID: 380-22081-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.049	525.2	Total/NA
Atrazine	ND		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.020	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400	0.59	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.59	525.2	Total/NA
Endrin	ND		ug/L	2	0.099	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.049	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.099	525.2	Total/NA
Simazine	ND		ug/L	4	0.049	525.2	Total/NA

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

Lab Sample ID: 380-22081-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.049	525.2	Total/NA

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Action Limit Summary

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22081-3

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-22081-1

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)	TPP (70-130)	PRY (70-130)
380-22081-1	AIEA GULCH WELLS PUMP 1 (	97	101	96
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	93	104	93
380-22081-2 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	99	108	98
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	92	101	92

Surrogate Legend

2NMX = 2-Nitro-m-xylene

TPP = Triphenylphosphate

PRY = Perylene-d12

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)	TPP (70-130)	PRY (70-130)
380-22076-D-1-B DU	Duplicate	96	103	93
LCS 380-19592/3-A	Lab Control Sample	98	105	98
LCS 380-19592/4-A	Lab Control Sample Dup	98	109	98
MB 380-19592/1-A	Method Blank	92	106	90
MRL 380-19592/2-A	Lab Control Sample	94	106	84

Surrogate Legend

2NMX = 2-Nitro-m-xylene

TPP = Triphenylphosphate

PRY = Perylene-d12

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)				
		Acenaphthi (65-113)	Phenanth (80-111)	CRY (60-139)	NPT (44-119)	PRY (36-161)
100435-B1	Method Blank	92	96	103	76	86
100435-BS1	Lab Control Sample	88	96	96	84	88
100435-BS2	Lab Control Sample Dup	85	92	90	110	98

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

Surrogate Summary

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

Job ID: 380-22081-1

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 (45-118)	Phenanth (56-123)	CRY (36-142)	NPT (20-112)	PRY (36-161)
380-22081-1	AIEA GULCH WELLS PUMP 1 (	98	98	89	76	83
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	66	95	92	68	82
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	116	90	78	109	84

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

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB (60-130)	XACOSAI (60-130)
380-22081-1	AIEA GULCH WELLS PUMP 1 (	62	76
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	67	73
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	64	74

Surrogate Legend
 BB = BROMOBENZENE
 HEXACOSANE = HEXACOSANE

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Matrix: WATER

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB (60-130)	XACOSAI (60-130)
22DSJ003WB	Method Blank		

Surrogate Legend
 BB = BROMOBENZENE
 HEXACOSANE = HEXACOSANE

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Matrix: WATER

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB (60-130)	XACOSAI (60-130)
22DSJ003WC	LCD	79	75
22DSJ003WL	Lab Control Sample	86	86

Surrogate Legend
 BB = BROMOBENZENE
 HEXACOSANE = HEXACOSANE

Surrogate Summary

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

Job ID: 380-22081-1

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)
380-22081-1	AIEA GULCH WELLS PUMP 1 (	89
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	90
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	90

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)
221332-01M	Matrix Spike	116
221332-01S	Matrix Spike Duplicate	116

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
22VG39119B	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)
22VG39119C	LCD	116
22VG39119L	Lab Control Sample	116

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)
380-22081-4	TB AIEA GULCH WELLS PUMP	90
380-22081-5	TB AIEA GULCH WELLS PUMP 2	89
380-22081-6	TB AIEA WELLS PUMPS 1&2	89

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Surrogate Summary

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

Job ID: 380-22081-1

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: MB 380-19592/1-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 19592

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
2,4'-DDE	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
2,4'-DDT	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
2,4-Dinitrotoluene	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
2,6-Dinitrotoluene	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
4,4'-DDD	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
4,4'-DDE	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
4,4'-DDT	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Acenaphthene	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Acenaphthylene	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Acetochlor	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Alachlor	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
alpha-BHC	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
alpha-Chlordane	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Anthracene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 13:45	1
Atrazine	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Benz(a)anthracene	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Benzo[a]pyrene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 13:45	1
Benzo[b]fluoranthene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 13:45	1
Benzo[g,h,i]perylene	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Benzo[k]fluoranthene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 13:45	1
beta-BHC	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Bromacil	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Butachlor	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Butylbenzylphthalate	ND		0.50	ug/L		10/05/22 09:03	10/06/22 13:45	1
Caffeine	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Chlorobenzilate	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Chloroneb	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Chlorothalonil (Draconil, Bravo)	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Chlorpyrifos	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Chrysene	ND		0.020	ug/L		10/05/22 09:03	10/06/22 13:45	1
delta-BHC	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Di(2-ethylhexyl)adipate	ND		0.60	ug/L		10/05/22 09:03	10/06/22 13:45	1
Bis(2-ethylhexyl) phthalate	ND		0.60	ug/L		10/05/22 09:03	10/06/22 13:45	1
Diazinon (Qualitative)	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Dibenz(a,h)anthracene	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Diclorvos (DDVP)	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Dieldrin	ND		0.20	ug/L		10/05/22 09:03	10/06/22 13:45	1
Diethylphthalate	ND		0.50	ug/L		10/05/22 09:03	10/06/22 13:45	1
Dimethoate	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Dimethylphthalate	ND		0.50	ug/L		10/05/22 09:03	10/06/22 13:45	1
Di-n-butyl phthalate	ND		1.0	ug/L		10/05/22 09:03	10/06/22 13:45	1
Di-n-octyl phthalate	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Endosulfan I (Alpha)	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Endosulfan II (Beta)	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Endosulfan sulfate	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Endrin	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Endrin aldehyde	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: MB 380-19592/1-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 19592

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Fluoranthene	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Fluorene	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
gamma-Chlordane	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Heptachlor	ND		0.040	ug/L		10/05/22 09:03	10/06/22 13:45	1
Heptachlor epoxide (isomer B)	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Hexachlorobenzene	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Hexachlorocyclopentadiene	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Indeno[1,2,3-cd]pyrene	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Isophorone	ND		0.50	ug/L		10/05/22 09:03	10/06/22 13:45	1
Lindane	ND		0.040	ug/L		10/05/22 09:03	10/06/22 13:45	1
Malathion	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Methoxychlor	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Metolachlor	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Metribuzin	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Molinate	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Naphthalene	ND		0.30	ug/L		10/05/22 09:03	10/06/22 13:45	1
Parathion	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Pendimethalin (Penoxaline)	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		10/05/22 09:03	10/06/22 13:45	1
Phenanthrene	ND		0.040	ug/L		10/05/22 09:03	10/06/22 13:45	1
Propachlor	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Pyrene	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Simazine	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Terbacil	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Terbutylazine	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
Thiobencarb	ND		0.20	ug/L		10/05/22 09:03	10/06/22 13:45	1
trans-Nonachlor	ND		0.050	ug/L		10/05/22 09:03	10/06/22 13:45	1
Trifluralin	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1

<i>Tentatively Identified Compound</i>	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
<i>Cyclotetrasiloxane, octamethyl-</i>	0.917	T J N	ug/L		2.30	556-67-2	10/05/22 09:03	10/06/22 13:45	1
<i>Decane</i>	1.37	T J N	ug/L		2.45	124-18-5	10/05/22 09:03	10/06/22 13:45	1
<i>Cyclopentasiloxane, decamethyl-</i>	0.616	T J N	ug/L		2.75	541-02-6	10/05/22 09:03	10/06/22 13:45	1
<i>9-Octadecenamide, (Z)-</i>	1.49	T J N	ug/L		7.63	301-02-0	10/05/22 09:03	10/06/22 13:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	92		70 - 130	10/05/22 09:03	10/06/22 13:45	1
Triphenylphosphate	106		70 - 130	10/05/22 09:03	10/06/22 13:45	1
Perylene-d12	90		70 - 130	10/05/22 09:03	10/06/22 13:45	1

Lab Sample ID: LCS 380-19592/3-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.99	2.05		ug/L		103	70 - 130
2,4'-DDE	1.99	2.13		ug/L		107	70 - 130

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QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: LCS 380-19592/3-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDT	1.99	2.08		ug/L		105	70 - 130
2,4-Dinitrotoluene	1.99	1.69		ug/L		85	70 - 130
2,6-Dinitrotoluene	1.99	1.99		ug/L		100	70 - 130
4,4'-DDD	1.99	2.18		ug/L		110	70 - 130
4,4'-DDE	1.99	2.23		ug/L		112	70 - 130
4,4'-DDT	1.99	2.04		ug/L		103	70 - 130
Acenaphthene	1.99	1.99		ug/L		100	70 - 130
Acenaphthylene	1.99	2.03		ug/L		102	70 - 130
Acetochlor	1.99	2.23		ug/L		112	70 - 130
Alachlor	1.99	2.14		ug/L		108	70 - 130
alpha-BHC	1.99	2.16		ug/L		108	70 - 130
alpha-Chlordane	1.99	2.02		ug/L		101	70 - 130
Anthracene	1.99	1.97		ug/L		99	70 - 130
Atrazine	1.99	2.31		ug/L		116	70 - 130
Benz(a)anthracene	1.99	2.18		ug/L		110	70 - 130
Benzo[a]pyrene	1.99	2.26		ug/L		114	70 - 130
Benzo[b]fluoranthene	1.99	2.28		ug/L		114	70 - 130
Benzo[g,h,i]perylene	1.99	2.28		ug/L		114	70 - 130
Benzo[k]fluoranthene	1.99	2.34		ug/L		118	70 - 130
beta-BHC	1.99	2.17		ug/L		109	70 - 130
Bromacil	1.99	2.14		ug/L		108	70 - 130
Butachlor	1.99	2.17		ug/L		109	70 - 130
Butylbenzylphthalate	1.99	2.08		ug/L		104	70 - 130
Caffeine	1.99	1.82		ug/L		92	45 - 137
Chlorobenzilate	1.99	1.75		ug/L		88	70 - 130
Chloroneb	1.99	2.14		ug/L		107	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	2.21		ug/L		111	70 - 130
Chlorpyrifos	1.99	2.13		ug/L		107	70 - 130
Chrysene	1.99	2.07		ug/L		104	70 - 130
delta-BHC	1.99	2.09		ug/L		105	70 - 130
Di(2-ethylhexyl)adipate	1.99	2.42		ug/L		122	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	2.21		ug/L		111	70 - 130
Diazinon (Qualitative)	1.99	2.14		ug/L		108	15 - 132
Dibenz(a,h)anthracene	1.99	1.98		ug/L		100	70 - 130
Diclorvos (DDVP)	1.99	2.25		ug/L		113	70 - 130
Dieldrin	1.99	2.14		ug/L		108	70 - 130
Diethylphthalate	1.99	2.25		ug/L		113	70 - 130
Dimethoate	1.99	1.15		ug/L		58	35 - 100
Dimethylphthalate	1.99	2.25		ug/L		113	70 - 130
Di-n-butyl phthalate	3.98	4.56		ug/L		115	70 - 130
Di-n-octyl phthalate	1.99	1.86		ug/L		93	70 - 130
Endosulfan I (Alpha)	1.99	1.96		ug/L		98	70 - 130
Endosulfan II (Beta)	1.99	2.19		ug/L		110	70 - 130
Endosulfan sulfate	1.99	2.36		ug/L		119	70 - 130
Endrin	1.99	2.17		ug/L		109	70 - 130
Endrin aldehyde	1.99	1.99		ug/L		100	70 - 130
EPTC	1.99	2.10		ug/L		105	70 - 130
Fluoranthene	1.99	2.10		ug/L		106	70 - 130
Fluorene	1.99	2.09		ug/L		105	70 - 130

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QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: LCS 380-19592/3-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
gamma-Chlordane	1.99	2.18		ug/L		110	70 - 130
Heptachlor	1.99	2.09		ug/L		105	70 - 130
Heptachlor epoxide (isomer B)	1.99	2.28		ug/L		115	70 - 130
Hexachlorobenzene	1.99	2.01		ug/L		101	70 - 130
Hexachlorocyclopentadiene	1.99	2.11		ug/L		106	70 - 130
Indeno[1,2,3-cd]pyrene	1.99	2.21		ug/L		111	70 - 130
Isophorone	1.99	2.19		ug/L		110	70 - 130
Lindane	1.99	2.11		ug/L		106	70 - 130
Malathion	1.99	2.07		ug/L		104	70 - 130
Methoxychlor	1.99	2.26		ug/L		114	70 - 130
Metolachlor	1.99	2.20		ug/L		111	70 - 130
Metribuzin	1.99	1.94		ug/L		98	70 - 130
Molinate	1.99	2.21		ug/L		111	70 - 130
Naphthalene	1.99	1.86		ug/L		93	70 - 130
Parathion	1.99	2.08		ug/L		105	70 - 130
Pendimethalin (Penoxaline)	1.99	2.08		ug/L		105	70 - 130
Phenanthrene	1.99	1.95		ug/L		98	70 - 130
Propachlor	1.99	2.24		ug/L		112	70 - 130
Pyrene	1.99	2.12		ug/L		107	70 - 130
Simazine	1.99	2.33		ug/L		117	70 - 130
Terbacil	1.99	2.06		ug/L		103	70 - 130
Terbutylazine	1.99	2.28		ug/L		115	70 - 130
Thiobencarb	1.99	2.13		ug/L		107	70 - 130
trans-Nonachlor	1.99	2.09		ug/L		105	70 - 130
Trifluralin	1.99	2.03		ug/L		102	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	98		70 - 130
Triphenylphosphate	105		70 - 130
Perylene-d12	98		70 - 130

Lab Sample ID: LCSD 380-19592/4-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.99	2.08		ug/L		104	70 - 130	1	20
2,4'-DDE	1.99	2.16		ug/L		108	70 - 130	2	20
2,4'-DDT	1.99	2.13		ug/L		107	70 - 130	2	20
2,4-Dinitrotoluene	1.99	1.76		ug/L		88	70 - 130	4	20
2,6-Dinitrotoluene	1.99	2.05		ug/L		103	70 - 130	3	20
4,4'-DDD	1.99	2.28		ug/L		115	70 - 130	5	20
4,4'-DDE	1.99	2.29		ug/L		115	70 - 130	3	20
4,4'-DDT	1.99	2.13		ug/L		107	70 - 130	4	20
Acenaphthene	1.99	2.03		ug/L		102	70 - 130	2	20
Acenaphthylene	1.99	2.04		ug/L		102	70 - 130	0	20
Acetochlor	1.99	2.21		ug/L		111	70 - 130	1	20
Alachlor	1.99	2.14		ug/L		107	70 - 130	0	20

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: LCSD 380-19592/4-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
alpha-BHC	1.99	2.20		ug/L		110	70 - 130	2	20	
alpha-Chlordane	1.99	2.02		ug/L		102	70 - 130	0	20	
Anthracene	1.99	1.99		ug/L		100	70 - 130	1	20	
Atrazine	1.99	2.40		ug/L		121	70 - 130	4	20	
Benz(a)anthracene	1.99	2.30		ug/L		115	70 - 130	5	20	
Benzo[a]pyrene	1.99	2.37		ug/L		119	70 - 130	5	20	
Benzo[b]fluoranthene	1.99	2.37		ug/L		119	70 - 130	4	20	
Benzo[g,h,i]perylene	1.99	2.30		ug/L		116	70 - 130	1	20	
Benzo[k]fluoranthene	1.99	2.36		ug/L		118	70 - 130	1	20	
beta-BHC	1.99	2.19		ug/L		110	70 - 130	1	20	
Bromacil	1.99	2.19		ug/L		110	70 - 130	2	20	
Butachlor	1.99	2.20		ug/L		111	70 - 130	2	20	
Butylbenzylphthalate	1.99	2.16		ug/L		109	70 - 130	4	20	
Caffeine	1.99	1.87		ug/L		94	45 - 137	3	20	
Chlorobenzilate	1.99	1.71		ug/L		86	70 - 130	3	20	
Chloroneb	1.99	2.18		ug/L		109	70 - 130	2	20	
Chlorothalonil (Draconil, Bravo)	1.99	2.22		ug/L		112	70 - 130	1	20	
Chlorpyrifos	1.99	2.19		ug/L		110	70 - 130	3	20	
Chrysene	1.99	2.09		ug/L		105	70 - 130	1	20	
delta-BHC	1.99	2.10		ug/L		105	70 - 130	1	20	
Di(2-ethylhexyl)adipate	1.99	2.54		ug/L		127	70 - 130	5	20	
Bis(2-ethylhexyl) phthalate	1.99	2.26		ug/L		114	70 - 130	2	20	
Diazinon (Qualitative)	1.99	2.18		ug/L		110	15 - 132	2	20	
Dibenz(a,h)anthracene	1.99	2.03		ug/L		102	70 - 130	2	20	
Diclorvos (DDVP)	1.99	2.28		ug/L		115	70 - 130	1	20	
Dieldrin	1.99	2.20		ug/L		110	70 - 130	3	20	
Diethylphthalate	1.99	2.25		ug/L		113	70 - 130	0	20	
Dimethoate	1.99	1.20		ug/L		60	35 - 100	4	20	
Dimethylphthalate	1.99	2.23		ug/L		112	70 - 130	1	20	
Di-n-butyl phthalate	3.98	4.52		ug/L		113	70 - 130	1	20	
Di-n-octyl phthalate	1.99	2.09		ug/L		105	70 - 130	11	20	
Endosulfan I (Alpha)	1.99	1.97		ug/L		99	70 - 130	1	20	
Endosulfan II (Beta)	1.99	2.18		ug/L		109	70 - 130	1	20	
Endosulfan sulfate	1.99	2.43		ug/L		122	70 - 130	3	20	
Endrin	1.99	2.20		ug/L		110	70 - 130	1	20	
Endrin aldehyde	1.99	1.98		ug/L		100	70 - 130	0	20	
EPTC	1.99	2.15		ug/L		108	70 - 130	3	20	
Fluoranthene	1.99	2.13		ug/L		107	70 - 130	1	20	
Fluorene	1.99	2.13		ug/L		107	70 - 130	2	20	
gamma-Chlordane	1.99	2.19		ug/L		110	70 - 130	0	20	
Heptachlor	1.99	2.11		ug/L		106	70 - 130	1	20	
Heptachlor epoxide (isomer B)	1.99	2.28		ug/L		114	70 - 130	0	20	
Hexachlorobenzene	1.99	2.04		ug/L		102	70 - 130	1	20	
Hexachlorocyclopentadiene	1.99	2.20		ug/L		111	70 - 130	4	20	
Indeno[1,2,3-cd]pyrene	1.99	2.25		ug/L		113	70 - 130	2	20	
Isophorone	1.99	2.22		ug/L		112	70 - 130	2	20	
Lindane	1.99	2.18		ug/L		110	70 - 130	3	20	
Malathion	1.99	2.13		ug/L		107	70 - 130	3	20	
Methoxychlor	1.99	2.30		ug/L		116	70 - 130	2	20	

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: LCSD 380-19592/4-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Metolachlor	1.99	2.22		ug/L		112	70 - 130	1	20
Metribuzin	1.99	1.86		ug/L		94	70 - 130	4	20
Molinate	1.99	2.25		ug/L		113	70 - 130	2	20
Naphthalene	1.99	1.89		ug/L		95	70 - 130	2	20
Parathion	1.99	2.17		ug/L		109	70 - 130	4	20
Pendimethalin (Penoxaline)	1.99	2.12		ug/L		107	70 - 130	2	20
Phenanthrene	1.99	1.95		ug/L		98	70 - 130	0	20
Propachlor	1.99	2.29		ug/L		115	70 - 130	2	20
Pyrene	1.99	2.17		ug/L		109	70 - 130	3	20
Simazine	1.99	2.39		ug/L		120	70 - 130	2	20
Terbacil	1.99	2.14		ug/L		108	70 - 130	4	20
Terbutylazine	1.99	2.32		ug/L		116	70 - 130	2	20
Thiobencarb	1.99	2.13		ug/L		107	70 - 130	0	20
trans-Nonachlor	1.99	2.11		ug/L		106	70 - 130	1	20
Trifluralin	1.99	2.11		ug/L		106	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	98		70 - 130
Triphenylphosphate	109		70 - 130
Perylene-d12	98		70 - 130

Lab Sample ID: MRL 380-19592/2-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	0.0992	0.131		ug/L		132	50 - 150
2,4'-DDE	0.0992	0.107		ug/L		108	50 - 150
2,4'-DDT	0.0992	0.118		ug/L		119	50 - 150
2,4-Dinitrotoluene	0.0992	0.133		ug/L		134	50 - 150
2,6-Dinitrotoluene	0.0992	0.0817	J	ug/L		82	50 - 150
4,4'-DDD	0.0992	0.0998		ug/L		101	50 - 150
4,4'-DDE	0.0992	0.107		ug/L		108	50 - 150
4,4'-DDT	0.0992	0.117		ug/L		118	50 - 150
Acenaphthene	0.0992	0.0963	J	ug/L		97	50 - 150
Acenaphthylene	0.0992	0.0846	J	ug/L		85	50 - 150
Acetochlor	0.0496	0.0459	J	ug/L		93	50 - 150
Alachlor	0.0496	0.0495	J	ug/L		100	50 - 150
alpha-BHC	0.0992	0.111		ug/L		112	50 - 150
alpha-Chlordane	0.0496	0.0520		ug/L		105	50 - 150
Anthracene	0.0198	ND		ug/L		95	50 - 150
Atrazine	0.0496	0.0498	J	ug/L		101	50 - 150
Benz(a)anthracene	0.0496	0.0497	J	ug/L		100	50 - 150
Benzo[a]pyrene	0.0198	0.0180	J	ug/L		91	50 - 150
Benzo[b]fluoranthene	0.0198	0.0198	J	ug/L		100	50 - 150
Benzo[g,h,i]perylene	0.0496	0.0418	J	ug/L		84	50 - 150
Benzo[k]fluoranthene	0.0198	0.0191	J	ug/L		97	50 - 150
beta-BHC	0.0992	0.0989	J	ug/L		100	50 - 150

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QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: MRL 380-19592/2-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Spike Added	MRL	MRL	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Bromacil	0.0992	0.135		ug/L		136	50 - 150
Butachlor	0.0496	0.0707		ug/L		143	50 - 150
Butylbenzylphthalate	0.149	0.177	J	ug/L		119	50 - 150
Caffeine	0.0496	0.0467	J	ug/L		94	50 - 150
Chlorobenzilate	0.0992	0.148		ug/L		149	50 - 150
Chloroneb	0.0992	0.112		ug/L		113	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0992	0.126		ug/L		127	50 - 150
Chlorpyrifos	0.0496	0.0529		ug/L		107	50 - 150
Chrysene	0.0198	0.0209		ug/L		106	50 - 150
delta-BHC	0.0992	0.120		ug/L		121	50 - 150
Di(2-ethylhexyl)adipate	0.297	0.333	J	ug/L		112	50 - 150
Bis(2-ethylhexyl) phthalate	0.595	0.634		ug/L		107	50 - 150
Diazinon (Qualitative)	0.0992	0.0969	J	ug/L		98	15 - 132
Dibenz(a,h)anthracene	0.0496	0.0518		ug/L		104	50 - 150
Diclorvos (DDVP)	0.0496	0.0544		ug/L		110	50 - 150
Dieldrin	0.0992	0.117	J	ug/L		118	50 - 150
Diethylphthalate	0.149	0.164	J	ug/L		110	50 - 150
Dimethoate	0.0992	0.0510	J	ug/L		51	35 - 100
Dimethylphthalate	0.297	0.294	J	ug/L		99	50 - 150
Di-n-butyl phthalate	0.297	0.388	J	ug/L		130	49 - 243
Di-n-octyl phthalate	0.0992	0.117		ug/L		118	50 - 150
Endosulfan I (Alpha)	0.0992	0.0827	J	ug/L		83	50 - 150
Endosulfan II (Beta)	0.0992	0.111		ug/L		112	50 - 150
Endosulfan sulfate	0.0992	0.0958	J	ug/L		97	50 - 150
Endrin	0.0992	0.134		ug/L		135	50 - 150
Endrin aldehyde	0.0992	0.124		ug/L		125	50 - 150
EPTC	0.0992	0.0953	J	ug/L		96	50 - 150
Fluoranthene	0.0496	0.0495	J	ug/L		100	50 - 150
Fluorene	0.0496	ND		ug/L		100	50 - 150
gamma-Chlordane	0.0496	0.0500		ug/L		101	50 - 150
Heptachlor	0.0397	0.0488		ug/L		123	50 - 150
Heptachlor epoxide (isomer B)	0.0496	0.0528		ug/L		107	50 - 150
Hexachlorobenzene	0.0496	0.0653		ug/L		132	50 - 150
Hexachlorocyclopentadiene	0.0496	0.0470	J	ug/L		95	50 - 150
Indeno[1,2,3-cd]pyrene	0.0496	0.0358	J	ug/L		72	50 - 150
Isophorone	0.0992	0.0997	J	ug/L		101	50 - 150
Lindane	0.0496	0.0406		ug/L		82	50 - 150
Malathion	0.0992	0.105		ug/L		106	50 - 150
Methoxychlor	0.0992	0.0894	J	ug/L		90	50 - 150
Metolachlor	0.0496	0.0517		ug/L		104	50 - 150
Metribuzin	0.0496	0.0540		ug/L		109	50 - 150
Molinate	0.0992	0.101		ug/L		102	50 - 150
Naphthalene	0.0992	0.0926	J	ug/L		93	50 - 150
Parathion	0.0992	0.0961	J	ug/L		97	50 - 150
Pendimethalin (Penoxaline)	0.0992	0.109		ug/L		110	50 - 150
Phenanthrene	0.0198	0.0211	J	ug/L		106	50 - 150
Propachlor	0.0496	0.0462	J	ug/L		93	50 - 150
Pyrene	0.0496	0.0522		ug/L		105	50 - 150
Simazine	0.0496	0.0545		ug/L		110	50 - 150

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: MRL 380-19592/2-A
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Terbacil	0.0992	0.108		ug/L		108	50 - 150
Terbutylazine	0.0992	0.0946	J	ug/L		95	50 - 150
Thiobencarb	0.0992	0.114	J	ug/L		115	50 - 150
trans-Nonachlor	0.0496	0.0515		ug/L		104	50 - 150
Trifluralin	0.0992	0.112		ug/L		113	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	94		70 - 130
Triphenylphosphate	106		70 - 130
Perylene-d12	84		70 - 130

Lab Sample ID: 380-22081-2 MS
Matrix: Drinking Water
Analysis Batch: 19817

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		1.97	2.07		ug/L		105	70 - 130
2,4'-DDE	ND		1.97	2.14		ug/L		109	70 - 130
2,4'-DDT	ND		1.97	2.08		ug/L		106	70 - 130
2,4-Dinitrotoluene	ND		1.97	1.84		ug/L		94	70 - 130
2,6-Dinitrotoluene	ND		1.97	2.15		ug/L		110	70 - 130
4,4'-DDD	ND		1.97	2.23		ug/L		113	70 - 130
4,4'-DDE	ND		1.97	2.24		ug/L		114	70 - 130
4,4'-DDT	ND		1.97	2.04		ug/L		104	70 - 130
Acenaphthene	ND		1.97	1.97		ug/L		100	70 - 130
Acenaphthylene	ND		1.97	2.08		ug/L		106	70 - 130
Acetochlor	ND		1.97	2.20		ug/L		112	70 - 130
Alachlor	ND		1.97	2.13		ug/L		109	70 - 130
alpha-BHC	ND		1.97	2.18		ug/L		111	70 - 130
alpha-Chlordane	ND		1.97	2.03		ug/L		103	70 - 130
Anthracene	ND		1.97	1.60		ug/L		81	70 - 130
Atrazine	ND		1.97	2.39		ug/L		121	70 - 130
Benz(a)anthracene	ND		1.97	2.18		ug/L		111	70 - 130
Benzo[a]pyrene	ND		1.97	2.13		ug/L		108	70 - 130
Benzo[b]fluoranthene	ND		1.97	2.40		ug/L		122	70 - 130
Benzo[g,h,i]perylene	ND		1.97	2.36		ug/L		120	70 - 130
Benzo[k]fluoranthene	ND		1.97	2.39		ug/L		122	70 - 130
beta-BHC	ND		1.97	2.15		ug/L		109	70 - 130
Bromacil	ND		1.97	2.19		ug/L		112	70 - 130
Butachlor	ND		1.97	2.19		ug/L		112	70 - 130
Butylbenzylphthalate	ND		1.97	2.11		ug/L		107	70 - 130
Caffeine	ND		1.97	2.13		ug/L		108	46 - 144
Chlorobenzilate	ND		1.97	1.80		ug/L		91	70 - 130
Chloroneb	ND		1.97	2.11		ug/L		107	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		1.97	2.23		ug/L		113	70 - 130
Chlorpyrifos	ND		1.97	2.15		ug/L		109	70 - 130
Chrysene	ND		1.97	2.09		ug/L		106	70 - 130
delta-BHC	ND		1.97	2.05		ug/L		104	70 - 130

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22081-2 MS
Matrix: Drinking Water
Analysis Batch: 19817

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Di(2-ethylhexyl)adipate	ND		1.97	2.49		ug/L		126	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.97	2.25		ug/L		115	70 - 130
Diazinon (Qualitative)	ND		1.97	2.20		ug/L		112	15 - 132
Dibenz(a,h)anthracene	ND		1.97	2.10		ug/L		107	70 - 130
Diclorvos (DDVP)	ND		1.97	2.29		ug/L		116	70 - 130
Dieldrin	ND		1.97	2.24		ug/L		114	70 - 130
Diethylphthalate	ND		1.97	2.24		ug/L		114	70 - 130
Dimethoate	ND		1.97	1.42		ug/L		72	34 - 111
Dimethylphthalate	ND		1.97	2.25		ug/L		114	70 - 130
Di-n-butyl phthalate	ND		3.93	4.51		ug/L		115	70 - 130
Di-n-octyl phthalate	ND		1.97	2.06		ug/L		105	70 - 130
Endosulfan I (Alpha)	ND		1.97	1.93		ug/L		98	70 - 130
Endosulfan II (Beta)	ND		1.97	2.22		ug/L		113	70 - 130
Endosulfan sulfate	ND		1.97	2.44		ug/L		124	70 - 130
Endrin	ND		1.97	2.19		ug/L		111	70 - 130
Endrin aldehyde	ND		1.97	2.09		ug/L		106	70 - 130
EPTC	ND		1.97	2.17		ug/L		110	70 - 130
Fluoranthene	ND		1.97	2.12		ug/L		108	70 - 130
Fluorene	ND		1.97	2.13		ug/L		108	70 - 130
gamma-Chlordane	ND		1.97	2.15		ug/L		109	70 - 130
Heptachlor	ND		1.97	2.09		ug/L		106	70 - 130
Heptachlor epoxide (isomer B)	ND		1.97	2.31		ug/L		117	70 - 130
Hexachlorobenzene	ND		1.97	2.02		ug/L		103	70 - 130
Hexachlorocyclopentadiene	ND		1.97	2.22		ug/L		113	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.97	2.30		ug/L		117	70 - 130
Isophorone	ND		1.97	2.21		ug/L		112	70 - 130
Lindane	ND		1.97	2.13		ug/L		108	70 - 130
Malathion	ND		1.97	2.13		ug/L		108	70 - 130
Methoxychlor	ND		1.97	2.32		ug/L		118	70 - 130
Metolachlor	ND		1.97	2.22		ug/L		113	70 - 130
Metribuzin	ND		1.97	1.99		ug/L		101	70 - 130
Molinate	ND		1.97	2.22		ug/L		113	70 - 130
Naphthalene	ND		1.97	1.86		ug/L		95	70 - 130
Parathion	ND		1.97	2.12		ug/L		108	70 - 130
Pendimethalin (Penoxaline)	ND		1.97	2.08		ug/L		106	70 - 130
Phenanthrene	ND		1.97	1.94		ug/L		99	70 - 130
Propachlor	ND		1.97	2.28		ug/L		116	70 - 130
Pyrene	ND		1.97	2.14		ug/L		109	70 - 130
Simazine	ND		1.97	2.35		ug/L		120	70 - 130
Terbacil	ND		1.97	2.20		ug/L		112	70 - 130
Terbutylazine	ND		1.97	2.31		ug/L		117	70 - 130
Thiobencarb	ND		1.97	2.13		ug/L		109	70 - 130
trans-Nonachlor	ND		1.97	2.11		ug/L		107	70 - 130
Trifluralin	ND		1.97	2.10		ug/L		107	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	99		70 - 130
Triphenylphosphate	108		70 - 130

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22081-2 MS
Matrix: Drinking Water
Analysis Batch: 19817

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA
Prep Batch: 19592

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Perylene-d12</i>	98		70 - 130

Lab Sample ID: 380-22076-D-1-B DU
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
2,4'-DDD	ND		ND		ug/L		NC	20
2,4'-DDE	ND		ND		ug/L		NC	20
2,4'-DDT	ND		ND		ug/L		NC	20
2,4-Dinitrotoluene	ND		ND		ug/L		NC	20
2,6-Dinitrotoluene	ND		ND		ug/L		NC	20
4,4'-DDD	ND		ND		ug/L		NC	20
4,4'-DDE	ND		ND		ug/L		NC	20
4,4'-DDT	ND		ND		ug/L		NC	20
Acenaphthene	ND		ND		ug/L		NC	20
Acenaphthylene	ND		ND		ug/L		NC	20
Acetochlor	ND		ND		ug/L		NC	20
Alachlor	ND		ND		ug/L		NC	20
alpha-BHC	ND		ND		ug/L		NC	20
alpha-Chlordane	ND		ND		ug/L		NC	20
Anthracene	ND		ND		ug/L		NC	20
Atrazine	ND		ND		ug/L		NC	20
Benz(a)anthracene	ND		ND		ug/L		NC	20
Benzo[a]pyrene	ND		ND		ug/L		NC	20
Benzo[b]fluoranthene	ND		ND		ug/L		NC	20
Benzo[g,h,i]perylene	ND		ND		ug/L		NC	20
Benzo[k]fluoranthene	ND		ND		ug/L		NC	20
beta-BHC	ND		ND		ug/L		NC	20
Bromacil	ND		ND		ug/L		NC	20
Butachlor	ND		ND		ug/L		NC	20
Butylbenzylphthalate	ND		ND		ug/L		NC	20
Caffeine	ND		ND		ug/L		NC	20
Chlorobenzilate	ND		ND		ug/L		NC	20
Chloroneb	ND		ND		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	ND		ND		ug/L		NC	20
Chlorpyrifos	ND		ND		ug/L		NC	20
Chrysene	ND		ND		ug/L		NC	20
delta-BHC	ND		ND		ug/L		NC	20
Di(2-ethylhexyl)adipate	ND		ND		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	ND		ND		ug/L		NC	20
Diazinon (Qualitative)	ND		ND		ug/L		NC	20
Dibenz(a,h)anthracene	ND		ND		ug/L		NC	20
Diclorvos (DDVP)	ND		ND		ug/L		NC	20
Dieldrin	ND		ND		ug/L		NC	20
Diethylphthalate	ND		ND		ug/L		NC	20
Dimethoate	ND		ND		ug/L		NC	20
Dimethylphthalate	ND		ND		ug/L		NC	20

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 380-22076-D-1-B DU
Matrix: Water
Analysis Batch: 19817

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 19592

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Di-n-butyl phthalate	ND		ND		ug/L		NC	20
Di-n-octyl phthalate	ND		ND		ug/L		NC	20
Endosulfan I (Alpha)	ND		ND		ug/L		NC	20
Endosulfan II (Beta)	ND		ND		ug/L		NC	20
Endosulfan sulfate	ND		ND		ug/L		NC	20
Endrin	ND		ND		ug/L		NC	20
Endrin aldehyde	ND		ND		ug/L		NC	20
EPTC	ND		ND		ug/L		NC	20
Fluoranthene	ND		ND		ug/L		NC	20
Fluorene	ND		ND		ug/L		NC	20
gamma-Chlordane	ND		ND		ug/L		NC	20
Heptachlor	ND		ND		ug/L		NC	20
Heptachlor epoxide (isomer B)	ND		ND		ug/L		NC	20
Hexachlorobenzene	ND		ND		ug/L		NC	20
Hexachlorocyclopentadiene	ND		ND		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	ND		ND		ug/L		NC	20
Isophorone	ND		ND		ug/L		NC	20
Lindane	ND		ND		ug/L		NC	20
Malathion	ND		ND		ug/L		NC	20
Methoxychlor	ND		ND		ug/L		NC	20
Metolachlor	ND		ND		ug/L		NC	20
Metribuzin	ND		ND		ug/L		NC	20
Molinate	ND		ND		ug/L		NC	20
Naphthalene	ND		ND		ug/L		NC	20
Parathion	ND		ND		ug/L		NC	20
Pendimethalin (Penoxaline)	ND		ND		ug/L		NC	20
Total Permethrin (mixed isomers)	ND		ND		ug/L		NC	20
Phenanthrene	ND		ND		ug/L		NC	20
Propachlor	ND		ND		ug/L		NC	20
Pyrene	ND		ND		ug/L		NC	20
Simazine	ND		ND		ug/L		NC	20
Terbacil	ND		ND		ug/L		NC	20
Terbutylazine	ND		ND		ug/L		NC	20
Thiobencarb	ND		ND		ug/L		NC	20
trans-Nonachlor	ND		ND		ug/L		NC	20
Trifluralin	ND		ND		ug/L		NC	20

Surrogate	DU %Recovery	DU Qualifier	Limits
2-Nitro-m-xylene	96		70 - 130
Triphenylphosphate	103		70 - 130
Perylene-d12	93		70 - 130

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 100435-B1
Matrix: BlankMatrix
Analysis Batch: O-38136

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-38136_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Acenaphthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Anthracene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Biphenyl	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Chrysene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/26/22 00:00	10/05/22 03:00	1
Fluoranthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Fluorene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Naphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Perylene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Phenanthrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	92		65 - 113	09/26/22 00:00	10/05/22 03:00	1
(d10-Phenanthrene)	96		80 - 111	09/26/22 00:00	10/05/22 03:00	1
(d12-Chrysene)	103		60 - 139	09/26/22 00:00	10/05/22 03:00	1
(d12-Perylene)	86		36 - 161	09/26/22 00:00	10/05/22 03:00	1
(d8-Naphthalene)	76		44 - 119	09/26/22 00:00	10/05/22 03:00	1

Lab Sample ID: 100435-BS1
Matrix: BlankMatrix
Analysis Batch: O-38136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-38136_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.474		µg/L		95	49 - 117
1-Methylphenanthrene	0.5	0.451		µg/L		90	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.588		µg/L		118	57 - 120
2,6-Dimethylnaphthalene	0.5	0.503		µg/L		101	54 - 117
2-Methylnaphthalene	0.5	0.439		µg/L		88	47 - 130
Acenaphthene	0.5	0.579		µg/L		116	53 - 131
Acenaphthylene	0.5	0.565		µg/L		113	43 - 140
Anthracene	0.5	0.44		µg/L		88	58 - 135

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 100435-BS1
Matrix: BlankMatrix
Analysis Batch: O-38136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-38136_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benz[a]anthracene	0.5	0.513		µg/L		103	55 - 145
Benzo[a]pyrene	0.5	0.398		µg/L		80	51 - 143
Benzo[b]fluoranthene	0.5	0.54		µg/L		108	46 - 165
Benzo[e]pyrene	0.5	0.501		µg/L		100	42 - 152
Benzo[g,h,i]perylene	0.5	0.419		µg/L		84	63 - 133
Benzo[k]fluoranthene	0.5	0.483		µg/L		97	56 - 145
Biphenyl	0.5	0.5		µg/L		100	56 - 119
Chrysene	0.5	0.452		µg/L		90	56 - 141
Dibenz[a,h]anthracene	0.5	0.519		µg/L		104	55 - 150
Dibenzo[a,l]pyrene	0.5	0.288		µg/L		58	50 - 150
Dibenzothiophene	0.5	0.446		µg/L		89	75 - 113
Disalicylidenepropanediamine	50	37		µg/L		74	50 - 150
Fluoranthene	0.5	0.439		µg/L		88	60 - 146
Fluorene	0.5	0.548		µg/L		110	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.498		µg/L		100	50 - 151
Naphthalene	0.5	0.461		µg/L		92	41 - 126
Perylene	0.5	0.4		µg/L		80	48 - 141
Phenanthrene	0.5	0.449		µg/L		90	67 - 127
Pyrene	0.5	0.497		µg/L		99	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	88		65 - 113
(d10-Phenanthrene)	96		80 - 111
(d12-Chrysene)	96		60 - 139
(d12-Perylene)	88		36 - 161
(d8-Naphthalene)	84		44 - 119

Lab Sample ID: 100435-BS2
Matrix: BlankMatrix
Analysis Batch: O-38136

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-38136_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.557		µg/L		111	49 - 117	16	30
1-Methylphenanthrene	0.5	0.466		µg/L		93	66 - 127	3	30
2,3,5-Trimethylnaphthalene	0.5	0.584		µg/L		117	57 - 120	1	30
2,6-Dimethylnaphthalene	0.5	0.481		µg/L		96	54 - 117	5	30
2-Methylnaphthalene	0.5	0.585		µg/L		117	47 - 130	28	30
Acenaphthene	0.5	0.565		µg/L		113	53 - 131	3	30
Acenaphthylene	0.5	0.561		µg/L		112	43 - 140	1	30
Anthracene	0.5	0.434		µg/L		87	58 - 135	1	30
Benz[a]anthracene	0.5	0.535		µg/L		107	55 - 145	4	30
Benzo[a]pyrene	0.5	0.497		µg/L		99	51 - 143	21	30
Benzo[b]fluoranthene	0.5	0.583		µg/L		117	46 - 165	8	30
Benzo[e]pyrene	0.5	0.539		µg/L		108	42 - 152	8	30
Benzo[g,h,i]perylene	0.5	0.456		µg/L		91	63 - 133	8	30
Benzo[k]fluoranthene	0.5	0.511		µg/L		102	56 - 145	5	30
Biphenyl	0.5	0.47		µg/L		94	56 - 119	6	30
Chrysene	0.5	0.432		µg/L		86	56 - 141	5	30

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 100435-BS2
Matrix: BlankMatrix
Analysis Batch: O-38136

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-38136_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Dibenz[a,h]anthracene	0.5	0.595		µg/L		119	55 - 150	13	30	
Dibenzo[a,i]pyrene	0.5	0.377		µg/L		75	50 - 150	26	30	
Dibenzothiophene	0.5	0.434		µg/L		87	75 - 113	2	30	
Disalicylidenepropanediamine	50	39.8		µg/L		80	50 - 150	8	30	
Fluoranthene	0.5	0.541		µg/L		108	60 - 146	20	30	
Fluorene	0.5	0.589		µg/L		118	58 - 131	7	30	
Indeno[1,2,3-cd]pyrene	0.5	0.619		µg/L		124	50 - 151	21	30	
Naphthalene	0.5	0.524		µg/L		105	41 - 126	13	30	
Perylene	0.5	0.446		µg/L		89	48 - 141	11	30	
Phenanthrene	0.5	0.439		µg/L		88	67 - 127	2	30	
Pyrene	0.5	0.546		µg/L		109	54 - 156	10	30	

Surrogate	LCS DUP		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	85		65 - 113
(d10-Phenanthrene)	92		80 - 111
(d12-Chrysene)	90		60 - 139
(d12-Perylene)	98		36 - 161
(d8-Naphthalene)	110		44 - 119

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Lab Sample ID: 22DSJ003WB
Matrix: WATER
Analysis Batch: 22DSJ003W

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
DIESEL	ND	U	0.025		mg/L			10/03/22 12:30	1
MOTOR OIL	ND	U	0.05		mg/L			10/03/22 12:30	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
BROMOBENZENE					10/03/22 12:30	1
HEXACOSANE					10/03/22 12:30	1

Lab Sample ID: 22DSJ003WL
Matrix: WATER
Analysis Batch: 22DSJ003W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
DIESEL	2.5	2.47		mg/L		99	50 - 130	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOBENZENE	86		60 - 130
HEXACOSANE	86		60 - 130

QC Sample Results

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

Job ID: 380-22081-1

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

Lab Sample ID: 22VG39I19B
Matrix: WATER
Analysis Batch: 22VG39I19

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			09/29/22 12:18	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE								09/29/22 12:18	1

Lab Sample ID: 22VG39I19L
Matrix: WATER
Analysis Batch: 22VG39I19

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	0.482		mg/L		96	60 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
BROMOFLUOROBENZENE	116		70 - 130				

Lab Sample ID: 22I332-01M
Matrix: WATER
Analysis Batch: 22VG39I19

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	0.465		mg/L		93	50 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
BROMOFLUOROBENZENE	116		60 - 140						

Lab Sample ID: 22I332-01S
Matrix: WATER
Analysis Batch: 22VG39I19

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	Limit
GASOLINE	ND		0.5	0.482		mg/L		96	50 - 130	4	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
BROMOFLUOROBENZENE	116		60 - 140								

QC Association Summary

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

Job ID: 380-22081-1

GC/MS Semi VOA

Prep Batch: 19592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22081-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	525.2	
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	525.2	
MB 380-19592/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-19592/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-19592/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-19592/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-22081-2 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
380-22076-D-1-B DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 19817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22081-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	525.2	19592
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	19592
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	525.2	19592
MB 380-19592/1-A	Method Blank	Total/NA	Water	525.2	19592
LCS 380-19592/3-A	Lab Control Sample	Total/NA	Water	525.2	19592
LCSD 380-19592/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	19592
MRL 380-19592/2-A	Lab Control Sample	Total/NA	Water	525.2	19592
380-22081-2 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	19592
380-22076-D-1-B DU	Duplicate	Total/NA	Water	525.2	19592

Subcontract

Analysis Batch: O-38136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22081-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-38136_P
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-38136_P
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-38136_P
100435-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-38136_P
100435-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-38136_P
100435-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-38136_P

Analysis Batch: 22DSJ003W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22081-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	8015 Diesel LL (EAL) and Motor Oil	
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 Diesel LL (EAL) and Motor Oil	
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	8015 Diesel LL (EAL) and Motor Oil	
22DSJ003WB	Method Blank	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	

Eurofins Eaton Monrovia

QC Association Summary

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

Job ID: 380-22081-1

Subcontract (Continued)

Analysis Batch: 22DSJ003W (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
22DSJ003WL	Lab Control Sample	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	

Analysis Batch: 22VG39119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22081-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-22081-4	TB AIEA GULCH WELLS PUMP 1	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-22081-5	TB AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-22081-6	TB AIEA WELLS PUMPS 1&2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
22VG39119B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22VG39119L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22I332-01M	Matrix Spike	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22I332-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-38136_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22081-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	EPA_625	
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA_625	
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	EPA_625	
100435-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
100435-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
100435-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-22081-1

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-22081-1

Date Collected: 09/26/22 10:25

Matrix: Drinking Water

Date Received: 09/27/22 18:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			19592	OTM3	EA MON	10/05/22 09:03
Total/NA	Analysis	525.2		1	19817	Q8LA	EA MON	10/06/22 14:25
Total/NA	Prep	EPA_625		1	O-38136_P			09/29/22 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-38136	YC		10/05/22 11:38
Total/NA	Analysis	8015 Diesel LL (EAL) and Motor Oil		1	22DSJ003W	SDees		10/03/22 15:17
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VG39I19	SDees		09/29/22 14:12

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

Lab Sample ID: 380-22081-2

Date Collected: 09/26/22 11:01

Matrix: Drinking Water

Date Received: 09/27/22 18:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			19592	OTM3	EA MON	10/05/22 09:03
Total/NA	Analysis	525.2		1	19817	Q8LA	EA MON	10/06/22 14:45
Total/NA	Prep	EPA_625		1	O-38136_P			09/29/22 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-38136	YC		10/05/22 13:22
Total/NA	Analysis	8015 Diesel LL (EAL) and Motor Oil		1	22DSJ003W	SDees		10/03/22 15:35
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VG39I19	SDees		09/29/22 16:06

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

Lab Sample ID: 380-22081-3

Date Collected: 09/26/22 09:56

Matrix: Drinking Water

Date Received: 09/27/22 18:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			19592	OTM3	EA MON	10/05/22 09:03
Total/NA	Analysis	525.2		1	19817	Q8LA	EA MON	10/06/22 15:05
Total/NA	Prep	EPA_625		1	O-38136_P			09/29/22 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-38136	YC		10/05/22 15:06
Total/NA	Analysis	8015 Diesel LL (EAL) and Motor Oil		1	22DSJ003W	SDees		10/03/22 15:54
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VG39I19	SDees		09/29/22 16:44

Lab Chronicle

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

Job ID: 380-22081-1

Client Sample ID: TB AIEA GULCH WELLS PUMP 1

Lab Sample ID: 380-22081-4

Date Collected: 09/26/22 10:25

Matrix: Water

Date Received: 09/27/22 10:00

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	22VG39I19	SDees		09/29/22 18:00

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-22081-5

Date Collected: 09/26/22 11:01

Matrix: Water

Date Received: 09/27/22 10:00

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	22VG39I19	SDees		09/29/22 18:38

Client Sample ID: TB AIEA WELLS PUMPS 1&2

Lab Sample ID: 380-22081-6

Date Collected: 09/26/22 09:56

Matrix: Water

Date Received: 09/27/22 10:00

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	22VG39I19	SDees		09/29/22 19:16

Laboratory References:

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

EA MON = Eurofins Eaton Monrovia, 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016, TEL (626)386-1100

Accreditation/Certification Summary

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

Job ID: 380-22081-1

Laboratory: Eurofins Eaton Monrovia

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-23

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	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	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	Caffeine
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	Diazinon (Qualitative)
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	Dimethoate
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

Accreditation/Certification Summary

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

Job ID: 380-22081-1

Laboratory: Eurofins Eaton Monrovia (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	Isophorone
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: 380-22081-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA MON
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 MON

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 MON = Eurofins Eaton Monrovia, 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016, TEL (626)386-1100



Sample Summary

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

Job ID: 380-22081-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-22081-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Drinking Water	09/26/22 10:25	09/27/22 18:05	HI0000331
380-22081-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	09/26/22 11:01	09/27/22 18:05	HI0000331
380-22081-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	09/26/22 09:56	09/27/22 18:05	HI0000331
380-22081-4	TB AIEA GULCH WELLS PUMP 1	Water	09/26/22 10:25	09/27/22 10:00	
380-22081-5	TB AIEA GULCH WELLS PUMP 2	Water	09/26/22 11:01	09/27/22 10:00	
380-22081-6	TB AIEA WELLS PUMPS 1&2	Water	09/26/22 09:56	09/27/22 10:00	

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

Date: 10-18-2022
EMAX Batch No.: 221332

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-22081

Enclosed is the Laboratory report for samples received on 09/28/22.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-22081-1	1332-01	09/26/22	WATER	TPH GASOLINE TPH DIESEL & MOTOR OIL
380-22081-2	1332-02	09/26/22	WATER	TPH GASOLINE TPH DIESEL & MOTOR OIL
380-22081-3	1332-03	09/26/22	WATER	TPH GASOLINE TPH DIESEL & MOTOR OIL
380-22081-4	1332-04	09/26/22	WATER	TPH GASOLINE
380-22081-5	1332-05	09/26/22	WATER	TPH GASOLINE
380-22081-6	1332-06	09/26/22	WATER	TPH GASOLINE
380-22081-1MS	1332-01M	09/26/22	WATER	TPH GASOLINE
380-22081-1MSD	1332-01S	09/26/22	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 CA002912022-22
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

Chain of Custody Record

Monrovia, CA (Suite 100)
 750 Royal Oaks Drive Suite 100
 Monrovia, CA 91016
 Phone: 626-396-1100



221332

Client Information (Sub Contract Lab)
 Client Contact: **Shilping/Receiving** Phone: _____
 Company: **EMAX Laboratories Inc** Address: **3051 Fujita Street, Torrance CA, 90505**
 City: **Torrance** State Zip: **CA, 90505**
 Phone: _____ PO #: _____
 Email: _____ WVO #: _____
 Project Name: **RED-HILL** Project #: **38001111**
 Site: **Honolulu BWS Sites** SSSOW#: _____

Sampler: _____ Lab PM: **Arada, Rachelle** Carrier Tracking No(s): _____
 E-Mail: **Rachelle.Arada@eurofins.com** State of Origin: **Hawaii** Page: **380-22397-1**
 Accreditations Required (See note): **State - Hawaii** Page 1 of 1
 Job #: **380-22081-1**

Due Date Requested: **10/1/2022** Analysis Requested: _____
 TAT Requested (days): _____
 Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Arniclor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2CO4S, 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 Date	Sample Time	Sample Type (C=Comp, G=grab)	MATRIX (Water, Solid, O-Water/Oil, BT-Tissue, A-Air)	Field Filtered Sample (Yes or No)	Performs MS/MSU (Yes or No)	SUB (8015 Gas (Purgeable) LL (EAL)/ 8015 Gas (Purgeable) LL (EAL))	SUB (8015 Diesel LL (EAL) and Motor Oil)/ 8015 Diesel LL (EAL) and Motor Oil	Total Number of Containers	Special Instructions/Note:
1 AIEA GULCH WELLS PUMP 1 (331-201-T P071) (380-22081-1)	9/26/22	10:25	Water	Water	X	X	X	X	6	See Attached Instructions
2 AIEA GULCH WELLS PUMP 2 (331-202-T P072) (380-22081-2)	9/26/22	11:01	Water	Water	X	X	X	X	6	See Attached Instructions
3 AIEA WELLS PUMPS 1&2 (260) (331-203-T P400) (380-22081-3)	9/26/22	09:56	Water	Water	X	X	X	X	6	See Attached Instructions
4 TB AIEA GULCH WELLS PUMP 1 (380-22081-4)	9/26/22	10:25	Water	Water	X	X	X	X	2	See Attached Instructions
5 TB AIEA GULCH WELLS PUMP 2 (380-22081-5)	9/26/22	11:01	Water	Water	X	X	X	X	2	See Attached Instructions
6 TB AIEA WELLS PUMPS 1&2 (380-22081-6)	9/26/22	09:56	Water	Water	X	X	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 out 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/test/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) _____
 Primary Deliverable Rank: 2
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: **Mr. Boers** Date/Time: **9-28-22 1:08** Company: **EMAX** Received by: _____ Date/Time: **9-28-22 12** Company: _____
 Relinquished by: _____ Date/Time: **9-29-22 15:20** Company: _____ Received by: _____ Date/Time: **9/28/22 15:20** Company: **EMAX**
 Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____
 Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____
REPORT ID: 221332



Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input checked="" type="checkbox"/> Others <i>Area Post</i>	Airbill / Tracking Number	ECN <i>221332</i>
<input type="checkbox"/> EMAX Courier <input type="checkbox"/> Client Delivery		Recipient <i>JHOWIN Zamora</i>
		Date <i>9/28/22</i> Time <i>1520</i>

COC INSPECTION

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

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 <i>11.6</i> °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
Thermometer:	A - S/N _____	B - S/N <i>210740237</i>	C - S/N _____
			<input checked="" type="checkbox"/> D - S/N <i>210740272</i>

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<i>4</i>	<i>19-20</i>	<i>D22</i>	<i>second date reads 8/10/22</i>	<i>R1</i>
<i>S16</i>	<i>21-24</i>	<i>D22</i>	<i>second date reads 8/15/22</i>	<i>↓</i>
<i>S16</i>	<i>21-24</i>	<i>D14</i>		<i>R4</i>
<i>9/28/22</i>				

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

MB 9/29/22

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? YES NO

LEGEND:

Code Description-Sample Management	Code Description-Sample Management	Code Description-Sample Management
D1 Analysis is not indicated in _____	D13 Out of Holding Time	R1 Proceed as indicated in <input checked="" type="checkbox"/> COC <input type="checkbox"/> Label
D2 Analysis mismatch COC vs label	<input checked="" type="checkbox"/> D14 Bubble is >6mm	R2 Refer to attached instruction
D3 Sample ID mismatch COC vs label	D15 No trip blank in cooler	R3 Cancel the analysis
D4 Sample ID is not indicated in _____	D16 Preservation not indicated in _____	R4 Use vial with smallest bubble first
D5 Container -[improper] [leaking] [broken]	D17 Preservation mismatch COC vs label	R5 Log-in with latest sampling date and time+1 min
D6 Date/Time is not indicated in _____	D18 Insufficient chemical preservative	R6 Adjust pH as necessary
D7 Date/Time mismatch COC vs label	D19 Insufficient Sample	R7 Filter and preserved as necessary
D8 Sample listed in COC is not received	D20 No filtration info for dissolved analysis	R8 _____
D9 Sample received is not listed in COC	D21 No sample for moisture determination	R9 _____
D10 No initial/date on corrections in COC/label	<input checked="" type="checkbox"/> D22 <i>2 dates</i>	R10 _____
D11 Container count mismatch COC vs received	D23 _____	R11 _____
D12 Container size mismatch COC vs received	D24 _____	R12 _____

REVIEWS:

Sample Labeling	<i>JHOWIN Zamora</i>	SRF	<i>Rebecca</i>	PM	<i>MB</i>
Date	<i>9/28/22</i>	Date	<i>9/28/22</i>	Date	<i>9/29/22</i>

REPORT ID: 221332

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

380-22081

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

SDG#: 22I332



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-22081

SDG : 22I332

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

A total of six(6) water samples were received on 09/28/22 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. VG39I19B - 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. VG39I19L/VG39I19C 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 I332-01M/I332-01S. 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

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=====
Client : EUROFINS EATON ANALYTICAL
Project : 380-22081
=====
SDG NO. : 221332
Instrument ID : GCT039
=====

```

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
									WATER
MBLK1W	VG39119B	1	NA	09/29/2212:18	09/29/2212:18	E129006A	E129004A	22VG39119	Method Blank
LCS1W	VG39119L	1	NA	09/29/2212:56	09/29/2212:56	E129007A	E129004A	22VG39119	Lab Control Sample (LCS)
LCD1W	VG39119C	1	NA	09/29/2213:34	09/29/2213:34	E129008A	E129004A	22VG39119	LCS Duplicate
380-22081-1	I332-01	1	NA	09/29/2214:12	09/29/2214:12	E129009A	E129004A	22VG39119	Field Sample
380-22081-1MS	I332-01M	1	NA	09/29/2214:50	09/29/2214:50	E129010A	E129004A	22VG39119	Matrix Spike Sample (MS)
380-22081-1MSD	I332-01S	1	NA	09/29/2215:28	09/29/2215:28	E129011A	E129004A	22VG39119	MS Duplicate (MSD)
380-22081-2	I332-02	1	NA	09/29/2216:06	09/29/2216:06	E129012A	E129004A	22VG39119	Field Sample
380-22081-3	I332-03	1	NA	09/29/2216:44	09/29/2216:44	E129013A	E129004A	22VG39119	Field Sample
380-22081-4	I332-04	1	NA	09/29/2218:00	09/29/2218:00	E129015A	E129014A	22VG39119	Field Sample
380-22081-5	I332-05	1	NA	09/29/2218:38	09/29/2218:38	E129016A	E129014A	22VG39119	Field Sample
380-22081-6	I332-06	1	NA	09/29/2219:16	09/29/2219:16	E129017A	E129014A	22VG39119	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: 09/26/22 10:25
Project     : 380-22081                   Date Received: 09/28/22
Batch No.   : 221332                       Date Extracted: 09/29/22 14:12
Sample ID   : 380-22081-1                 Date Analyzed: 09/29/22 14:12
Lab Samp ID : I332-01                     Dilution Factor: 1
Lab File ID : E129009A                    Matrix: WATER
Ext Btch ID : 22VG39I19                   % Moisture: NA
Calib. Ref.: E129004A                    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	0.0355	0.0400	89	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 : JChun Analyzed by : JChun

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

=====
Client : EUROFINs EATON ANALYTICAL Date Collected: 09/26/22 11:01
Project : 380-22081 Date Received: 09/28/22
Batch No. : 221332 Date Extracted: 09/29/22 16:06
Sample ID : 380-22081-2 Date Analyzed: 09/29/22 16:06
Lab Samp ID: I332-02 Dilution Factor: 1
Lab File ID: E129012A Matrix: WATER
Ext Btch ID: 22VG39119 % Moisture: NA
Calib. Ref.: E129004A 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	0.0359	0.0400	90	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 : JChun Analyzed by : JChun

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/26/22 09:56
Project     : 380-22081                 Date Received: 09/28/22
Batch No.   : 221332                   Date Extracted: 09/29/22 16:44
Sample ID   : 380-22081-3              Date Analyzed: 09/29/22 16:44
Lab Samp ID: I332-03                   Dilution Factor: 1
Lab File ID: E129013A                  Matrix: WATER
Ext Btch ID: 22VG39119                 % Moisture: NA
Calib. Ref.: E129004A                  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	0.0360	0.0400	90	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 : JChun Analyzed by : JChun

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

=====
Client : EUROFINS EATON ANALYTICAL Date Collected: 09/26/22 10:25
Project : 380-22081 Date Received: 09/28/22
Batch No. : 221332 Date Extracted: 09/29/22 18:00
Sample ID : 380-22081-4 Date Analyzed: 09/29/22 18:00
Lab Samp ID: 1332-04 Dilution Factor: 1
Lab File ID: E129015A Matrix: WATER
Ext Btch ID: 22VG39I19 % Moisture: NA
Calib. Ref.: E129014A 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	0.0359	0.0400	90	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 : JChun Analyzed by : JChun

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/26/22 11:01
Project     : 380-22081                   Date Received: 09/28/22
Batch No.   : 221332                       Date Extracted: 09/29/22 18:38
Sample ID   : 380-22081-5                 Date Analyzed: 09/29/22 18:38
Lab Samp ID : 1332-05                     Dilution Factor: 1
Lab File ID : EI29016A                    Matrix: WATER
Ext Btch ID : 22VG39119                   % Moisture: NA
Calib. Ref. : EI29014A                    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	0.0354	0.0400	89	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 : JChun Analyzed by : JChun

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/26/22 09:56
Project     : 380-22081                   Date Received: 09/28/22
Batch No.   : 221332                      Date Extracted: 09/29/22 19:16
Sample ID   : 380-22081-6                 Date Analyzed: 09/29/22 19:16
Lab Samp ID : 1332-06                     Dilution Factor: 1
Lab File ID : EI29017A                    Matrix: WATER
Ext Btch ID : 22VG39119                   % Moisture: NA
Calib. Ref. : EI29014A                    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	0.0355	0.0400	89	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 : JChun Analyzed by : JChun

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QC SUMMARIES

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

```

=====
Client       : EUROFINS EATON ANALYTICAL   Date Collected: 09/29/22 12:18
Project      : 380-22081                   Date Received: 09/29/22
Batch No.    : 221332                       Date Extracted: 09/29/22 12:18
Sample ID    : MBLK1W                       Date Analyzed: 09/29/22 12:18
Lab Samp ID  : VG39I19B                     Dilution Factor: 1
Lab File ID  : E129006A                     Matrix: WATER
Ext Btch ID  : 22VG39I19                   % Moisture: NA
Calib. Ref.  : E129004A                   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	0.0320	0.0400	80	60-140

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

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-22081
BATCH NO. : 221332
METHOD : 5030B/8015B

```

=====
MATRIX      : WATER                               % MOISTURE:NA
DILUTION FACTOR: 1                               1
SAMPLE ID   : MBLK1W                             LCS1W       LCD1W
LAB SAMPLE ID : VG39119B                         VG39119L   VG39119C
LAB FILE ID  : EI29006A                         EI29007A   EI29008A
DATE PREPARED : 09/29/22 12:18                   09/29/22 12:56  09/29/22 13:34
DATE ANALYZED : 09/29/22 12:18                   09/29/22 12:56  09/29/22 13:34
PREP BATCH   : 22VG39119                         22VG39119   22VG39119
CALIBRATION REF: EI29004A                       EI29004A   EI29004A
  
```

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	0.482	96	0.500	0.497	99	3	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0465	116	0.0400	0.0465	116	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 : 380-22081
BATCH NO. : 221332
METHOD : 5030B/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : 380-22081-1	380-22081-1MS	380-22081-1MSD
LAB SAMPLE ID : 1332-01	1332-01M	1332-01S
LAB FILE ID : E129009A	E129010A	E129011A
DATE PREPARED : 09/29/22 14:12	09/29/22 14:50	09/29/22 15:28
DATE ANALYZED : 09/29/22 14:12	09/29/22 14:50	09/29/22 15:28
PREP BATCH : 22VG39119	22VG39119	22VG39119
CALIBRATION REF: E129004A	E129004A	E129004A

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	0.465	93	0.500	0.482	96	4	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0462	116	0.0400	0.0464	116	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-22081

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 221332



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-22081

SDG : 22I332

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

A total of three(3) water samples were received on 09/28/22 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. DSJ003WB - 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. DSJ003WL/DSJ003WC 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. Diesel was within MS QC limits in 22I333-01M/22I333-01S. 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.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL
Project    : 380-22081
SDG NO.   : 221332
Instrument ID : D5
=====
  
```

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
									WATER
MBLK1W	DSJ003WB	1	NA	10/03/2212:30	10/01/2215:45	LJ03007A	LJ03003A	22DSJ003W	Method Blank
LCS1W	DSJ003WL	1	NA	10/03/2212:49	10/01/2215:45	LJ03008A	LJ03003A	22DSJ003W	Lab Control Sample (LCS)
LCD1W	DSJ003WC	1	NA	10/03/2213:07	10/01/2215:45	LJ03009A	LJ03003A	22DSJ003W	LCS Duplicate
380-22081-1	I332-01	1	NA	10/03/2215:17	10/01/2215:45	LJ03016A	LJ03003A	22DSJ003W	Field Sample
380-22081-2	I332-02	1	NA	10/03/2215:35	10/01/2215:45	LJ03017A	LJ03003A	22DSJ003W	Field Sample
380-22081-3	I332-03	1	NA	10/03/2215:54	10/01/2215:45	LJ03018A	LJ03003A	22DSJ003W	Field Sample

FN - Filename
% Moist - Percent Moisture



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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/26/22 10:25
Project     : 380-22081                   Date Received: 09/28/22
Batch No.   : 221332                       Date Extracted: 10/01/22 15:45
Sample ID   : 380-22081-1                 Date Analyzed: 10/03/22 15:17
Lab Samp ID: 221332-01                     Dilution Factor: 1
Lab File ID: LJ03016A                       Matrix: WATER
Ext Btch ID: 22DSJ003W                       % Moisture: NA
Calib. Ref.: LJ03003A                       Instrument ID: D5
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)		
Diesel	ND	0.026	0.013		
Motor Oil	ND	0.052	0.026		
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT	
Bromobenzene	0.324	0.525	62	60-130	
Hexacosane	0.0993	0.131	76	60-130	

Notes:

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 950ml Final Volume : 5ml
Prepared by : JMuert Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/26/22 11:01
Project     : 380-22081                   Date Received: 09/28/22
Batch No.   : 221332                       Date Extracted: 10/01/22 15:45
Sample ID   : 380-22081-2                 Date Analyzed: 10/03/22 15:35
Lab Samp ID : 221332-02                   Dilution Factor: 1
Lab File ID : LJ03017A                     Matrix: WATER
Ext Btch ID : 22DSJ003W                    % Moisture: NA
Calib. Ref.: LJ03003A                     Instrument ID: D5
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.026	0.013	
Motor Oil	ND	0.052	0.026	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.354	0.525	67	60-130
Hexacosane	0.0960	0.131	73	60-130

Notes:

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 950ml Final Volume : 5ml
Prepared by : JMuert Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/26/22 09:56
Project    : 380-22081                   Date Received: 09/28/22
Batch No.  : 221332                       Date Extracted: 10/01/22 15:45
Sample ID  : 380-22081-3                 Date Analyzed: 10/03/22 15:54
Lab Samp ID: 221332-03                   Dilution Factor: 1
Lab File ID: LJ03018A                    Matrix: WATER
Ext Btch ID: 22DSJ003W                   % Moisture: NA
Calib. Ref.: LJ03003A                    Instrument ID: D5
=====
  
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.026	0.013	
Motor Oil	ND	0.052	0.026	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.335	0.520	64	60-130
Hexacosane	0.0957	0.130	74	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   : 960ml           Final Volume : 5ml
Prepared by    : JMuert           Analyzed by  : SDeeso
  
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QC SUMMARIES

METHOD 3520C/8015B
 TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 10/01/22 15:45
Project     : 380-22081                   Date Received: 10/01/22
Batch No.   : 221332                       Date Extracted: 10/01/22 15:45
Sample ID   : MBLK1W                       Date Analyzed: 10/03/22 12:30
Lab Samp ID: DSJ003WB                     Dilution Factor: 1
Lab File ID: LJ03007A                     Matrix: WATER
Ext Btch ID: 22DSJ003W                   % Moisture: NA
Calib. Ref.: LJ03003A                   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	0.362	0.500	72	60-130
Hexacosane	0.101	0.125	80	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 : JMuert Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-22081
BATCH NO. : 221332
METHOD : 3520C/8015B

```

=====
MATRIX      : WATER                               % MOISTURE:NA
DILUTION FACTOR: 1                               1
SAMPLE ID   : MBLK1W                             LCS1W         LCD1W
LAB SAMPLE ID : DSJ003WB                         DSJ003WL     DSJ003WC
LAB FILE ID  : LJ03007A                         LJ03008A     LJ03009A
DATE PREPARED : 10/01/22 15:45                 10/01/22 15:45
DATE ANALYZED : 10/03/22 12:30                 10/03/22 12:49
PREP BATCH   : 22DSJ003W                       22DSJ003W
CALIBRATION REF: LJ03003A                      LJ03003A     LJ03003A
  
```

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.50	2.47	99	2.50	2.10	84	16	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.428	86	0.500	0.397	79	60-130
Hexacosane	0.125	0.108	86	0.125	0.0941	75	60-130

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 : 380-22076
BATCH NO. : 221333
METHOD : 3520C/8015B

```

=====
MATRIX      : WATER                                     % MOISTURE:NA
DILUTION FACTOR: 1                                   1
SAMPLE ID   : 380-22076-1                             380-22076-1MSD
LAB SAMPLE ID : 221333-01                             221333-01S
LAB FILE ID  : LJ03097A                               LJ03021A
DATE PREPARED : 10/01/22 15:45                       10/01/22 15:45
DATE ANALYZED : 10/04/22 16:12                       10/03/22 16:49
PREP BATCH   : 22DSJ003W                             22DSJ003W
CALIBRATION REF: LJ03089A                             LJ03003A
  
```

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.60	2.47	95	2.78	2.37	85	4	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.520	0.383	74	0.555	0.449	81	60-130
Hexacosane	0.130	0.110	85	0.139	0.109	79	60-130

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

October 07, 2022

Debbie Frank
Eurofins Eaton Analytical
750 Royal Oaks Drive
Suite 100
Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-22081-1
Physis Project ID: 1407003-303

Dear Debbie,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 9/28/2022. A total of 3 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

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

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

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

Regards,

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

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-303

RED-HILL Project # 38001111 Job # 380-22081-1

Total Samples: 3

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
100436	AIEA GULCH WELLS PUMP 331-201-TP071	(380-22081-1)	9/26/2022	10:25	Samplewater	Not Specified
100437	AIEA GULCH WELLS PUMP 331-202-TP072	(380-22081-2)	9/26/2022	11:01	Samplewater	Not Specified
100438	AIEA WELLS PUMPS 1&2 (268) 31-203-TP400	(380-22081-3)	9/26/2022	9:56	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.

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PHYSIS QUALIFIER CODES

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

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

ANALYTICAL REPORT

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ENVIRONMENTAL LABORATORIES, INC.

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 100436-R1 AIEA GULCH WELLS PUMP 1 331-20 Matrix: Samplewater											
Disalicylideneopropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-38136	29-Sep-22	05-Oct-22
Sample ID: 100437-R1 AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater											
Disalicylideneopropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-38136	29-Sep-22	05-Oct-22
Sample ID: 100438-R1 AIEA WELLS PUMPS 1&2 (260) 331- Matrix: Samplewater											
Disalicylideneopropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-38136	29-Sep-22	05-Oct-22



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 100436-R1 AIEA GULCH WELLS PUMP 1331-20 Matrix: Samplewater							Sampled: 26-Sep-22 10:25		Received: 28-Sep-22		
(d10-Acenaphthene)	EPA 625.1	% Recovery	98	1			Total		0-38136	29-Sep-22	05-Oct-22
(d10-Phenanthrene)	EPA 625.1	% Recovery	98	1			Total		0-38136	29-Sep-22	05-Oct-22
(d12-Chrysene)	EPA 625.1	% Recovery	89	1			Total		0-38136	29-Sep-22	05-Oct-22
(d12-Perylene)	EPA 625.1	% Recovery	83	1			Total		0-38136	29-Sep-22	05-Oct-22
(d8-Naphthalene)	EPA 625.1	% Recovery	76	1			Total		0-38136	29-Sep-22	05-Oct-22
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22

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-38136	29-Sep-22	05-Oct-22
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
Sample ID: 100437-R1	AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater						Sampled:	26-Sep-22 11:01		Received:	28-Sep-22	
(d10-Acenaphthene)	EPA 625.1	% Recovery	66	1			Total		0-38136	29-Sep-22	05-Oct-22	
(d10-Phenanthrene)	EPA 625.1	% Recovery	95	1			Total		0-38136	29-Sep-22	05-Oct-22	
(d12-Chrysene)	EPA 625.1	% Recovery	92	1			Total		0-38136	29-Sep-22	05-Oct-22	
(d12-Perylene)	EPA 625.1	% Recovery	82	1			Total		0-38136	29-Sep-22	05-Oct-22	
(d8-Naphthalene)	EPA 625.1	% Recovery	68	1			Total		0-38136	29-Sep-22	05-Oct-22	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	

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-38136	29-Sep-22	05-Oct-22
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 100438-R1	AIEA WELLS PUMPS 1&2 (260) 331- Matrix: Samplewater						Sampled:	26-Sep-22	9:56	Received:	28-Sep-22
(d10-Acenaphthene)	EPA 625.1	% Recovery	116	1			Total		0-38136	29-Sep-22	05-Oct-22
(d10-Phenanthrene)	EPA 625.1	% Recovery	90	1			Total		0-38136	29-Sep-22	05-Oct-22
(d12-Chrysene)	EPA 625.1	% Recovery	78	1			Total		0-38136	29-Sep-22	05-Oct-22
(d12-Perylene)	EPA 625.1	% Recovery	84	1			Total		0-38136	29-Sep-22	05-Oct-22
(d8-Naphthalene)	EPA 625.1	% Recovery	109	1			Total		0-38136	29-Sep-22	05-Oct-22
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22

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-38136	29-Sep-22	05-Oct-22
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	29-Sep-22	05-Oct-22

QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

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- 2
- 3
- 4
- 5
- 6
- 7
- 8
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- 12
- 13
- 14
- 15
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- 17

Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE		SOURCE		ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 100435-B1		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:		Received:					
		Method: EPA 625.1				Batch ID: O-38136		Prepared: 26-Sep-22		Analyzed: 05-Oct-22					
Disalicylideneopropanediamin	Total	ND	1	0.05	0.1	µg/L									
Sample ID: 100435-BS1		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:		Received:					
		Method: EPA 625.1				Batch ID: O-38136		Prepared: 26-Sep-22		Analyzed: 05-Oct-22					
Disalicylideneopropanediamin	Total	37	1	0.05	0.1	µg/L	50	0	74	50 - 150%	PASS				
Sample ID: 100435-BS2		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:		Received:					
		Method: EPA 625.1				Batch ID: O-38136		Prepared: 26-Sep-22		Analyzed: 05-Oct-22					
Disalicylideneopropanediamin	Total	39.8	1	0.05	0.1	µg/L	50	0	80	50 - 150%	PASS	8	30	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 100435-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
	Method: EPA 625.1					Batch ID: O-38136	Prepared: 26-Sep-22	Analyzed: 05-Oct-22			
(d10-Acenaphthene)	Total	92	1			% Recovery	100	92	65 - 113%	PASS	
(d10-Phenanthrene)	Total	96	1			% Recovery	100	96	80 - 111%	PASS	
(d12-Chrysene)	Total	103	1			% Recovery	100	103	60 - 139%	PASS	
(d12-Perylene)	Total	86	1			% Recovery	100	86	36 - 161%	PASS	
(d8-Naphthalene)	Total	76	1			% Recovery	100	76	44 - 119%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L					
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L					
Anthracene	Total	ND	1	0.001	0.005	µg/L					
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L					
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L					
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Biphenyl	Total	ND	1	0.001	0.005	µg/L					
Chrysene	Total	ND	1	0.001	0.005	µg/L					
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L					
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L					

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

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



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 100435-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-38136			Prepared: 26-Sep-22		Analyzed: 05-Oct-22					
(d10-Acenaphthene)	Total	88	1			% Recovery	100	0	88	65 - 113%	PASS	
(d10-Phenanthrene)	Total	96	1			% Recovery	100	0	96	80 - 111%	PASS	
(d12-Chrysene)	Total	96	1			% Recovery	100	0	96	60 - 139%	PASS	
(d12-Perylene)	Total	88	1			% Recovery	100	0	88	36 - 161%	PASS	
(d8-Naphthalene)	Total	84	1			% Recovery	100	0	84	44 - 119%	PASS	
1-Methylnaphthalene	Total	0.474	1	0.001	0.005	µg/L	0.5	0	95	49 - 117%	PASS	
1-Methylphenanthrene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.588	1	0.001	0.005	µg/L	0.5	0	118	57 - 120%	PASS	
2,6-Dimethylnaphthalene	Total	0.503	1	0.001	0.005	µg/L	0.5	0	101	54 - 117%	PASS	
2-Methylnaphthalene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	47 - 130%	PASS	
Acenaphthene	Total	0.579	1	0.001	0.005	µg/L	0.5	0	116	53 - 131%	PASS	
Acenaphthylene	Total	0.565	1	0.001	0.005	µg/L	0.5	0	113	43 - 140%	PASS	
Anthracene	Total	0.44	1	0.001	0.005	µg/L	0.5	0	88	58 - 135%	PASS	
Benz[a]anthracene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.398	1	0.001	0.005	µg/L	0.5	0	80	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.54	1	0.001	0.005	µg/L	0.5	0	108	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.501	1	0.001	0.005	µg/L	0.5	0	100	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.419	1	0.001	0.005	µg/L	0.5	0	84	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	56 - 145%	PASS	
Biphenyl	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	56 - 119%	PASS	
Chrysene	Total	0.452	1	0.001	0.005	µg/L	0.5	0	90	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.519	1	0.001	0.005	µg/L	0.5	0	104	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.288	1	0.001	0.005	µg/L	0.5	0	58	50 - 150%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION	QA CODE _c
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Dibenzothiophene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	75 - 113%	PASS	
Fluoranthene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	60 - 146%	PASS	
Fluorene	Total	0.548	1	0.001	0.005	µg/L	0.5	0	110	58 - 131%	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	50 - 151%	PASS	
Naphthalene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	41 - 126%	PASS	
Perylene	Total	0.4	1	0.001	0.005	µg/L	0.5	0	80	48 - 141%	PASS	
Phenanthrene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	67 - 127%	PASS	
Pyrene	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	54 - 156%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE		
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 100435-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:				
		Method: EPA 625.1			Batch ID: O-38136			Prepared: 26-Sep-22			Analyzed: 05-Oct-22				
(d10-Acenaphthene)	Total	85	1				% Recovery	100	0	85	65 - 113%	PASS	3	30	PASS
(d10-Phenanthrene)	Total	92	1				% Recovery	100	0	92	80 - 111%	PASS	4	30	PASS
(d12-Chrysene)	Total	90	1				% Recovery	100	0	90	60 - 139%	PASS	6	30	PASS
(d12-Perylene)	Total	98	1				% Recovery	100	0	98	36 - 161%	PASS	11	30	PASS
(d8-Naphthalene)	Total	110	1				% Recovery	100	0	110	44 - 119%	PASS	27	30	PASS
1-Methylnaphthalene	Total	0.557	1	0.001	0.005	µg/L		0.5	0	111	49 - 117%	PASS	16	30	PASS
1-Methylphenanthrene	Total	0.466	1	0.001	0.005	µg/L		0.5	0	93	66 - 127%	PASS	3	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.584	1	0.001	0.005	µg/L		0.5	0	117	57 - 120%	PASS	1	30	PASS
2,6-Dimethylnaphthalene	Total	0.481	1	0.001	0.005	µg/L		0.5	0	96	54 - 117%	PASS	5	30	PASS
2-Methylnaphthalene	Total	0.585	1	0.001	0.005	µg/L		0.5	0	117	47 - 130%	PASS	28	30	PASS
Acenaphthene	Total	0.565	1	0.001	0.005	µg/L		0.5	0	113	53 - 131%	PASS	3	30	PASS
Acenaphthylene	Total	0.561	1	0.001	0.005	µg/L		0.5	0	112	43 - 140%	PASS	1	30	PASS
Anthracene	Total	0.434	1	0.001	0.005	µg/L		0.5	0	87	58 - 135%	PASS	1	30	PASS
Benz[a]anthracene	Total	0.535	1	0.001	0.005	µg/L		0.5	0	107	55 - 145%	PASS	4	30	PASS
Benzo[a]pyrene	Total	0.497	1	0.001	0.005	µg/L		0.5	0	99	51 - 143%	PASS	21	30	PASS
Benzo[b]fluoranthene	Total	0.583	1	0.001	0.005	µg/L		0.5	0	117	46 - 165%	PASS	8	30	PASS
Benzo[e]pyrene	Total	0.539	1	0.001	0.005	µg/L		0.5	0	108	42 - 152%	PASS	8	30	PASS
Benzo[g,h,i]perylene	Total	0.456	1	0.001	0.005	µg/L		0.5	0	91	63 - 133%	PASS	8	30	PASS
Benzo[k]fluoranthene	Total	0.511	1	0.001	0.005	µg/L		0.5	0	102	56 - 145%	PASS	5	30	PASS
Biphenyl	Total	0.47	1	0.001	0.005	µg/L		0.5	0	94	56 - 119%	PASS	6	30	PASS
Chrysene	Total	0.432	1	0.001	0.005	µg/L		0.5	0	86	56 - 141%	PASS	5	30	PASS
Dibenz[a,h]anthracene	Total	0.595	1	0.001	0.005	µg/L		0.5	0	119	55 - 150%	PASS	13	30	PASS
Dibenzo[a,l]pyrene	Total	0.377	1	0.001	0.005	µg/L		0.5	0	75	50 - 150%	PASS	26	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Dibenzothiophene	Total	0.434	1	0.001	0.005	µg/L	0.5	0	87	75 - 113%	PASS	2	30	PASS
Fluoranthene	Total	0.541	1	0.001	0.005	µg/L	0.5	0	108	60 - 146%	PASS	20	30	PASS
Fluorene	Total	0.589	1	0.001	0.005	µg/L	0.5	0	118	58 - 131%	PASS	7	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.619	1	0.001	0.005	µg/L	0.5	0	124	50 - 151%	PASS	21	30	PASS
Naphthalene	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	41 - 126%	PASS	13	30	PASS
Perylene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	48 - 141%	PASS	11	30	PASS
Phenanthrene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	67 - 127%	PASS	2	30	PASS
Pyrene	Total	0.546	1	0.001	0.005	µg/L	0.5	0	109	54 - 156%	PASS	10	30	PASS

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PHYSIS
TENTATIVELY
IDENTIFIED COMPOUNDS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Sample ID: 100436

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.4347	7.4362	1111	Anthracene-D10-	1517-22-2	96
No TICs were detected in this sample per the criteria.					

Concentration estimated using the response for Anthracene-d10

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Sample ID: 100437

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.4326	8.2563	1111	Anthracene-D10-	1719-06-8	92
No TICs were detected in this sample per the criteria.					

Concentration estimated using the response for Anthracene-d10

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Sample ID: 100438

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.4356	6.5519	1111	Anthracene-D10-	1719-06-8	97
No TICs were detected in this sample per the criteria.					

Concentration estimated using the response for Anthracene-d10

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PERFORMANCE CHAIN OF CUSTODY

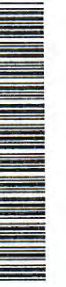
TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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

Chain of Custody Record



Client Information (Sub Contract Lab)

Client Contact: **Arada, Rachelle** | Lab P#: **Arada, Rachelle** | Carrier Tracking No(s): **380-22400-1**

Shipping/Receiving: **Rachelle.Arada@eurofins.com** | E-Mail: **Rachelle.Arada@eurofins.com** | State of Origin: **Hawaii** | Page: **Page 1 of 1**

Company: **Physis Environmental Laboratories** | Accreditations Required (See note): **State - Hawaii** | Job #: **380-22081-1**

Address: **1904 W right Circle,** | Due Date Requested: **10/11/2022** | Preservation Codes: **A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - NaOH, G - Amolher, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4.5, X - Trizma, Z - other (specify)**

Analysis Requested

TAT Requested (days): **7**

City: **Anaheim**

State, Zip: **CA, 92806**

Phone: **PO #:**

Email: **WO #:**

Project Name: **RED-HILL** | Project #: **38001111**

Site: **Honolulu BWS Sites** | SSO#: **SSOW#:**

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (G=comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT= tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs) / 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
AIEA GULCH WELLS PUMP 1 (331-201-T-P071) (380-22081-1)	9/26/22	10:25		Water	X	X		2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (331-202-T-P072) (380-22081-2)	9/26/22	11:01		Water	X	X		2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) (331-203-T-P400) (380-22081-3)	9/26/22	09:56		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/test/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 Eurofins Eaton Analytical, LLC.

Possible Hazard Identification

Unconfirmed

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

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

Return To Client Disposal By Lab Archive For _____ Months

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

Relinquished by: **9-18-22 1059** **Company:** **EEA**

Relinquished by: **9-28-22 1435** **Company:** **EEA**

Relinquished by: **9-18-22 12** **Company:** **EEA**

Relinquished by: **9-18-22 1435** **Company:** **EEA**

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

Cooler Temperature(s) °C and Other Remarks:

Project Iteration ID: 1407003-303
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-22081-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: DA
2. Date Received: 9/28/22
3. Time Received: 1425
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): 3.2
 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: DA

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:

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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				Sampler: BAILEY	Lab PM: Frank, Debbie L	Carrier Tracking No(s):	COC No: 380-9754-2757.1										
Client Contact: Dr. Ron Fenstemacher				Phone: 1-808-748-5840	E-Mail: Debbie.Frank@et.eurofinsus.com	State of Origin:	Page: Page 1 of 3										
Company: City & County of Honolulu				PWSID:	Analysis Requested			Job #:									
Address: 630 South Beretania Street Chemistry Lab				Due Date Requested:				Field Filtered Samples (Yes or No) Performance/MS (Yes or No) SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil 625.2_PREC - (MOD) 826plus Plus TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)								
City: Honolulu				TAT Requested (days):	380-22081 COC 												
State, Zip: HI, 96843				Compliance Project: Δ Yes Δ No								Total Number of Containers					
Phone: 808-748-5091(Tel)				PO #: C20525101 exp 05312023											Special Instructions/Note:		
Email: RFENSTEMACHER@hbws.org				W/O #:														Other:
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill				Project #: 38001111				Sample Identification									
Site: Hawaii				SSOW#:	Sample Date Sample Time Sample Type (C=comp, G=grab) Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)												
											Preservation Code:						
														R R RA RA			
																	AIEA GULCH WELLS PUMP 1 (331-201-TP071) AIEA GULCH WELLS PUMP 2 (331-202-TP072) AIEA WELLS PUMPS1&2(260)331-203-TP400 HALAWA SHAFT (331-241-TP401) HALAWA WELLS UNITS1&2(331-206-TP065) MOANALUA WELLS (331-223-TP202) AIEA GULCH WELLS PUMP 1 (331-201-TP071) AIEA GULCH WELLS PUMP 2 (331-202-TP072) AIEA WELLS PUMPS1&2(260)331-203-TP400 HALAWA SHAFT (331-241-TP401) HALAWA WELLS UNITS1&2(331-206-TP065)
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											09/26/2022 1025 G						
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																	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									
					Deliverable Requested: I, II, III, IV, Other (specify)												
											Special Instructions/QC Requirements:						
														Empty Kit Relinquished by: Date: Time: Method of Shipment:			
																	Relinquished by: BAILEY Date/Time: 09/26/2022 Company: HAWAIIAN BOWLING Received by: Mark Date/Time: 9/27/22 1000 Company: PEAH
								Relinquished by: Date/Time: Company: Received by: Date/Time: Company:									
					Relinquished by: Date/Time: Company: Received by: Date/Time: Company:												
											Custody Seals Intact: Δ Yes Δ No Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:						
														Ver: 06/08/2021			
																	Page 105 of 114
								10/26/2022									
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Chain of Custody Record

Client Information		Sampler: BAILEY	Lab PM: Frank, Debbie L	Carrier Tracking No(s):	COC No: 380-9754-2757.1									
Client Contact: Dr. Ron Fenstemacher		Phone: 1-808-748-5840	E-Mail: Debbie.Frank@et.eurofinsus.com	State of Origin:	Page: Page 1 of 3									
Company: City & County of Honolulu		PWSID:	Analysis Requested											
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:	Analysis Requested SUBCONTRACT - 625 PAH Physits LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil 525.2_PREC - (MOD) 525plus Plus TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)											
City: Honolulu		TAT Requested (days):												
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No												
Phone: 808-748-5091(Tel)		PO #: C20525101 exp 05312023												
Email: RFENSTEMACHER@hbws.org		WO #:												
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111	Total Number of Containers											
Site: Hawaii		SSOW#:												
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Performance Index (Yes or No)	Special Instructions/Note:						
				Preservation Code:		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	R	R	RA	RA			
AIEA GULCH WELLS PUMP 1 (331-201-TP071)					Water									
AIEA GULCH WELLS PUMP 2 (331-202-TP072)		09/26/2022	1101	G	Water				X	X	X	X		
AIEA WELLS PUMPS1&2(260)331-203-TP400					Water									
HALAWA SHAFT (331-241-TP401)					Water									
HALAWA WELLS UNITS1&2(331-206-TP065)					Water									
MOANALUA WELLS (331-223-TP202)					Water									
AIEA GULCH WELLS PUMP 1 (331-201-TP071)					Water									
AIEA GULCH WELLS PUMP 2 (331-202-TP072)					Water									
AIEA WELLS PUMPS1&2(260)331-203-TP400					Water									
HALAWA SHAFT (331-241-TP401)					Water									
HALAWA WELLS UNITS1&2(331-206-TP065)					Water									
Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)										
<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				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months										
Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements:										
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:										
Relinquished by: BAILEY		Date/Time: 09/26/2022	Time: 1400	Company: HBWS				Received by: Mark Urcutio						
Relinquished by:		Date/Time:	Time:	Company:				Received by:						
Relinquished by:		Date/Time:	Time:	Company:				Received by:						
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:										

Chain of Custody Record



Client Information				Sampler: BAILEY	Lab PM: Frank, Debbie L	Carrier Tracking No(s):	COC No: 380-9754-2757.2					
Client Contact: Dr. Ron Fenstemacher				Phone: 1-808-748-5840	E-Mail: Debbie.Frank@et.eurofinsus.com	State of Origin:	Page: Page 2 of 3					
Company: City & County of Honolulu				PWSID:	Analysis Requested		Job #:					
Address: 630 South Beretania Street Chemistry Lab				Due Date Requested:			Field Filtered Sample (Yes or No) Part (MMS) (MSB) (MSB) (MNB)	Total Number of Containers	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)			
City: Honolulu				TAT Requested (days):	SUBCONTRACT - 625 PAH Physys LL (EAL) + TICs							
State, Zip: HI, 96843				Compliance Project: Δ Yes Δ No	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)							
Phone: 808-748-5091(Tel)				PO #: C20525101 exp 05312023	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil							
Email: RFENSTEMACHER@hbws.org				WO #:	525.2_PRC - (MOD) 625plus Plus TICs							
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill				Project #: 38001111	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		Other:					
Site: Hawaii				SSOW#:								
Sample Identification				Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:		Special Instructions/Note:		
								R	R	RA	RA	
MOANALUA WELLS (331-223-TP202)							Water					
AIEA GULCH WELLS PUMP 1 (331-201-TP071)							Water					
AIEA GULCH WELLS PUMP 2 (331-202-TP072)							Water					
AIEA WELLS PUMPS1&2(260)331-203-TP400							Water					
HALAWA SHAFT (331-241-TP401)							Water					
HALAWA WELLS UNITS1&2(331-206-TP065)							Water					
MOANALUA WELLS (331-223-TP202)							Water					
AIEA GULCH WELLS PUMP 1 (331-201-TP071)							Water					
AIEA GULCH WELLS PUMP 2 (331-202-TP072)							Water					
AIEA WELLS PUMPS1&2(260)331-203-TP400				09/26/2022	0956	G	Water		X	X	X	
HALAWA SHAFT (331-241-TP401)							Water					
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)						
<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						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:						
Empty Kit Relinquished by:				Date:	Time:	Method of Shipment:						
Relinquished by: BAILEY				Date/Time: 09/26/2022 1400	Company: HBWS	Received by: Mark Urrutia		Date/Time: 9/27/22 1000	Company: ERA			
Relinquished by:				Date/Time:	Company:	Received by:		Date/Time:	Company:			
Relinquished by:				Date/Time:	Company:	Received by:		Date/Time:	Company:			
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:						

Chain of Custody Record



Client Information		Sampler: BAILEY	Lab PM: Frank, Debbie L	Carrier Tracking No(s):	COC No: 380-9754-2757.3					
Client Contact: Dr. Ron Fenstermacher		Phone: 1-808-748-5840	E-Mail: Debbie.Frank@et.eurofinsus.com	State of Origin:	Page: Page 3 of 3					
Company: City & County of Honolulu		PWSID:	Analysis Requested							
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:	Field Filtered Sample (Yes or No) Perform SWS/SD/Yes/No/No SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil 525.2_PREC - (MOD) 525plus Plus TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)							
City: Honolulu		TAT Requested (days):								
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No								
Phone: 808-748-5091(Tel)		PO #: C20525101 exp 05312023								
Email: RFENSTEMACHER@hbws.org		WO#:								
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111	Total Number of Containers							
Site: Hawaii		SSOW#:								
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Special Instructions/Note:			
HALAWA WELLS UNITS1&2(331-206-TP065)					Water					
MOANALUA WELLS (331-223-TP202)					Water					
TB AIEA GULCH WELLS PUMP1 331-201-TP071		09/26/2022	1025		Water					
TB AIEA GULCH WELLS PUMP2 331-202-TP07		09/26/2022	1101		Water					
TB AIEA WELLS PUMPS1&2(260)331-203-TP400		09/26/2022	0956		Water					
TB HALAWA SHAFT (331-241-TP401)					Water					
TB HALAWA WELLS UNITS1&2(331-206-TP065)					Water					
TB MOANALUA WELLS (331-223-TP202)					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					
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:								
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:						
Relinquished by: BAILEY		Date/Time: 09/26/2022	Company: HBWS	Received by: Mark Urechia		Date/Time: 9/27/22	Company: FEA			
Relinquished by:		Date/Time:	Company:	Received by:		Date/Time:	Company:			
Relinquished by:		Date/Time:	Company:	Received by:		Date/Time:	Company:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:					

Bottle Order Information

Bottle Order: RUSH RED-HILL WEEKLY
 Bottle Order #: 2757
 Request From Client: 7/20/2022
 Date Order Posted: 7/20/2022 11:12:54AM
 Order Status: Ready To Process
 Prepared By: Davis Haley
Deliver By Date: 9/12/2022 11:59:00PM
 Lab Project Number: 38001111
 PWSID: HI0000331

Order Completion Information

Creator: Davis Haley
 Filled by:
 Sent Date:
 Sent Via:
 Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
6	2	16	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH + MS/MSD Volume	
6	4	24	Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
6	2	16	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
6	2	12	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal		
6	2	12	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		

Total Bottle Summary

Bottle Type Description	Preservative	Bottle Count
Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	16
Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	16
Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	12
VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	12
Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	24
Total Bottles:		80

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

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

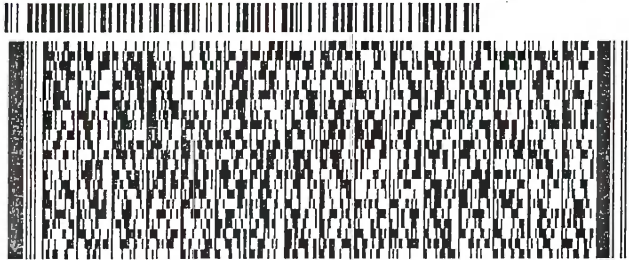
SHIP DATE: 26SEP22
ACTWGT: 58.00 LB
CAD: 100205419/INET4530

BILL RECEIPT

TO **M. VASQUEZ**
EUROFINS EATON ANALYTICAL, INC
750 ROYAL OAKS DR
SUITE 100
MONROVIA CA 91016

581J1EC8QFE2D

(626) 386-1178 REF:
INV.
PO: DEPT:

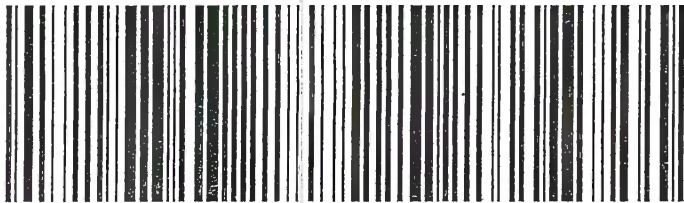


TUE - 27 SEP 10:30A
PRIORITY OVERNIGHT

2 of 2
MPS# 7700 4031 9911
0263
Mstr# 7700 4032 0179
0201

WZ WHPA

91016
CA-US BUR



After printing this label:

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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

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



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

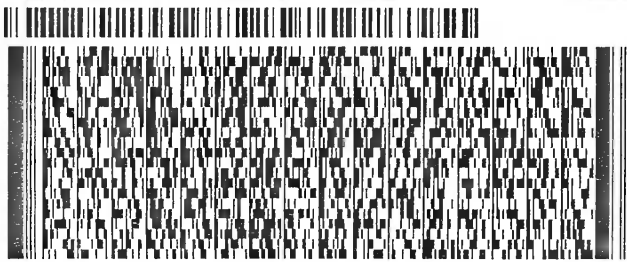
SHIP DATE: 26SEP22
ACTWGT: 58.00 LB
CAD: 100205419/INET4530

BILL RECIPIENT

TO **M. VASQUEZ**
EUROFINS EATON ANALYTICAL, INC
750 ROYAL OAKS DR
SUITE 100
MONROVIA CA 91016

(626) 386-1178 REF:
INV DEPT
PO

581JH1E060FE20



1 of 2

TUE - 27 SEP 10:30A

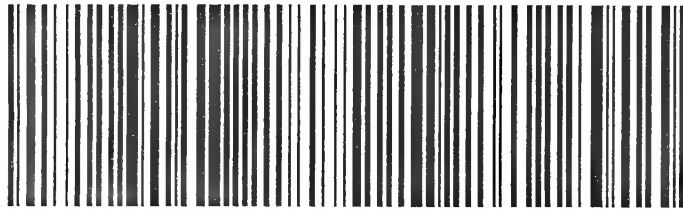
PRIORITY OVERNIGHT

TRK# 7700 4032 0179
0201

MASTER

WZ WHPA

91016
CA-US BUR



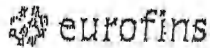
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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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



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Eaton Analytical

INTERNAL CHAIN OF CUSTODY RECORD

EEA Folder Number:

SAMPLE TEMP RECEIVED:
 Note! If samples are out of temperature range, let the ASMs know, ASMs will determine whether to proceed with analysis or not.
SAMPLES REC'D DAY OF COLLECTION? Yes / No

IR Gun ID = 6504 (Observation = 2.9 °C) (Corr. Factor 0.1 °C) (Final = 2.8 °C)

TYPE OF ICE: Real Synthetic No Ice CONDITION OF ICE: Frozen Partially Frozen Thawed N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: _____

Compliance Acceptance Criteria:

- 1) Chemistry: >0, ≤ 6°C, not frozen (NELAP) (if received after 24 hrs of sample collection)
- 2) Microbiology, Distribution: < 10°C, not frozen (can be ≥ 10°C if received on ice the same day as sample collection, within 8 hours)
- 3) Microbiology, Surface Water: < 10°C (if received after 2 hours of sample collection)

If out of temperature range for both Chemistry and Microbiology samples and temperature does not confirm, then measure the temperature of each quadrant and record each temperature of the quadrants

1 = (Observation = _____ °C) (Corr. Factor = _____ °C) (Final = _____ °C)	2 = (Observation = _____ °C) (Corr. Factor = _____ °C) (Final = _____ °C)
3 = (Observation = _____ °C) (Corr. Factor = _____ °C) (Final = _____ °C)	4 = (Observation = _____ °C) (Corr. Factor = _____ °C) (Final = _____ °C)

4 Dioxin (1613 or 2,3,7,8 TCDD): must be between 0-4 °C, not frozen (if received after 24 hrs of sample collection)

5) pH Check. Manufacturer: _____ Lot Number: _____ pH strip type: 0 - 14 or _____ Expiration Date: _____ Results: _____

6) Chlorine check. Manufacturer: Sansafe, Lot No.: _____ Expiration Date: _____ Results: _____

7) VOA and Radon Headspace:

No Samples with Headspace:

Samples with Headspace (see below):

Headspace Documentation (use additional VOC and Radon Internal COFC for additional bottles)

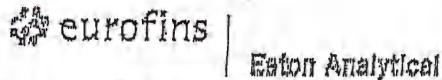
Example from headspace concerns: Methods 815.4, HAA(8251,852), 805, 8PME, @CH, 832LCMS, 858, 838, Anatoxin, LCMS methods using 40 ml vials, International Olanter

None/<8 mm				>8mm Test				None/<8 mm				>8mm Test				None/<8 mm				>8mm Test			
Samp ID	Bottle #	mm	Test	Samp ID	Bottle #	mm	Test	Samp ID	Bottle #	mm	Test	Samp ID	Bottle #	mm	Test	Samp ID	Bottle #	mm	Test	Samp ID	Bottle #	mm	Test

Note Sample IDs which have dissimilar headspace (i.e. potential sampling errors): _____

RECEIVED BY: <u>Mauje</u>	SIGNATURE: <u>Mart Urutia</u>	PRINT NAME: <u>Mart Urutia</u>	COMPANY/TITLE: <u>Eurofins Eaton Analytical</u>
			DATE: <u>9/27/22</u> TIME: <u>1000</u>
SIGNATURE: _____		PRINT NAME: _____	
SAMPLES CHECKED AGAINST OGD BY: _____		COMPANY/TITLE: <u>Eurofins Eaton Analytical</u>	
		DATE: _____ TIME: _____	

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INTERNAL CHAIN OF CUSTODY RECORD

EEA Folder Number:

SAMPLE TEMP RECEIVED:
Note! If samples are out of temperature range, let the ASMs know. ASMs will determine whether to proceed with analysis or not.
SAMPLES REC'D DAY OF COLLECTION? Yes / No

IR Gun ID = 6304 (Observation = 2.4 °C) (Corr. Factor 0.1 °C) (Final = 2.3 °C)

TYPE OF ICE: Real Synthetic No Ice CONDITION OF ICE: Frozen Partially Frozen Thawed N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: _____

Compliance Acceptance Criteria:

- 1) Chemistry: >0, ≤ 6°C, not frozen (NELAP) (if received after 24 hrs of sample collection)
- 2) Microbiology, Distribution: < 10°C, not frozen (can be ≥ 10°C if received on ice the same day as sample collection, within 8 hours)
- 3) Microbiology, Surface Water: < 10°C (if received after 2 hours of sample collection)

If out of temperature range for both Chemistry and Microbiology samples and temperature does not confirm, then measure the temperature of each quadrant and record each temperature of the quadrants

1 = (Observation = _____ °C) (Corr. Factor _____ °C) (Final = _____ °C)	2 = (Observation = _____ °C) (Corr. Factor _____ °C) (Final = _____ °C)
3 = (Observation = _____ °C) (Corr. Factor _____ °C) (Final = _____ °C)	4 = (Observation = _____ °C) (Corr. Factor _____ °C) (Final = _____ °C)

4 Dioxin (1813 or 2,3,7,8 TCDD): must be between 0-4 °C, not frozen (if received after 24 hrs of sample collection)

5) pH Check. Manufacturer: _____ Lot Number: _____ pH strip type: 0 - 14 or _____ Expiration Date: _____ Results: _____

6) Chlorine check. Manufacturer: Sansafe. Lot No.: _____ Expiration Date: _____ Results: _____

7) VOA and Radon Headspace: No Samples with Headspace: Samples with Headspace (see below):

Headspace Documentation (use additional VOC and Radon Internal COFC for additional bottles)

Exempt from headspace concerns: Methods 816.4, HAA(8251,852), 806, SPME, @GH, 832LCMS, 859, 838, Anatoxin, LCMS methods using 40 ml vials, International clients:

None/<8 mm				None/<8 mm				None/<8 mm				None/<8 mm			
Samp ID	Bottle #	>8mm	Test	Samp ID	Bottle #	>8mm	Test	Samp ID	Bottle #	>8mm	Test	Samp ID	Bottle #	>8mm	Test

Note Sample IDs which have dissimilar headspace (i.e. potential sampling errors): _____

RECEIVED BY	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
		Mark Urcute	Eurofins Eston Analytical	9/27/22	1000
SAMPLES CHECKED AGAINST DOG BY:	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
			Eurofins Eston Analytical		

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-22081-1

Login Number: 22081
List Number: 1
Creator: Segura, Ryan

List Source: Eurofins Eaton Monrovia

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