

## ANALYTICAL REPORT

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

Laboratory Job ID: 380-22076-1  
Client Project/Site: 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:

10/25/2022 6:56:33 PM

Kathleen Robb, Client Program Manager  
(949)261-1022

[Kathleen.Robb@et.eurofinsus.com](mailto:Kathleen.Robb@et.eurofinsus.com)

Designee for

Rachelle Arada, Manager of Project Management  
(626)386-1106

[Rachelle.Arada@et.eurofinsus.com](mailto:Rachelle.Arada@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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  
10/25/2022 6:56:33 PM

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

# 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 . . . . .	11
Surrogate Summary . . . . .	12
QC Sample Results . . . . .	15
QC Association Summary . . . . .	30
Lab Chronicle . . . . .	32
Certification Summary . . . . .	33
Method Summary . . . . .	35
Sample Summary . . . . .	36
Subcontract Data . . . . .	37
Chain of Custody . . . . .	85
Receipt Checklists . . . . .	88



# Definitions/Glossary

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

Job ID: 380-22076-1

## 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: 380-22076-1

---

## Job ID: 380-22076-1

---

### Laboratory: Eurofins Eaton Monrovia

#### Narrative

---

#### Job Narrative 380-22076-1

#### 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 temperature of the cooler at receipt was 1.9° 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: 380-22076-1

**Client Sample ID: HALAWA WELLS P1 (331-023-WL065)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-22076-1**

No Detections.

**Client Sample ID: TB**

**Lab Sample ID: 380-22076-2**

No Detections.

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

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Monrovia

# Client Sample Results

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

Job ID: 380-22076-1

**Client Sample ID: HALAWA WELLS P1 (331-023-WL065)**

**Lab Sample ID: 380-22076-1**

**Date Collected: 09/26/22 10:10**

**Matrix: Drinking Water**

**Date Received: 09/27/22 10:00**

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

Eurofins Eaton Monrovia

# Client Sample Results

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

Job ID: 380-22076-1

**Client Sample ID: HALAWA WELLS P1 (331-023-WL065)**

**Lab Sample ID: 380-22076-1**

**Date Collected: 09/26/22 10:10**

**Matrix: Drinking Water**

**Date Received: 09/27/22 10:00**

**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		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
Fluorene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
gamma-Chlordane	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Heptachlor	ND		0.039	ug/L		10/05/22 09:03	10/06/22 14:05	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Hexachlorobenzene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Isophorone	ND		0.49	ug/L		10/05/22 09:03	10/06/22 14:05	1
Lindane	ND		0.039	ug/L		10/05/22 09:03	10/06/22 14:05	1
Malathion	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
Methoxychlor	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
Metolachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Metribuzin	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Molinate	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
Naphthalene	ND		0.30	ug/L		10/05/22 09:03	10/06/22 14:05	1
Parathion	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
Pendimethalin (Penoxaline)	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		10/05/22 09:03	10/06/22 14:05	1
Phenanthrene	ND		0.039	ug/L		10/05/22 09:03	10/06/22 14:05	1
Propachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Pyrene	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Simazine	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Terbacil	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
Terbuthylazine	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
Thiobencarb	ND		0.20	ug/L		10/05/22 09:03	10/06/22 14:05	1
trans-Nonachlor	ND		0.049	ug/L		10/05/22 09:03	10/06/22 14:05	1
Trifluralin	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
1-Methylnaphthalene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	1
2-Methylnaphthalene	ND		0.098	ug/L		10/05/22 09:03	10/06/22 14:05	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 14:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	97		70 - 130	10/05/22 09:03	10/06/22 14:05	1
Triphenylphosphate	105		70 - 130	10/05/22 09:03	10/06/22 14:05	1
Perylene-d12	92		70 - 130	10/05/22 09:03	10/06/22 14:05	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 16:49	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Acenaphthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1

Eurofins Eaton Monrovia

# Client Sample Results

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

Job ID: 380-22076-1

**Client Sample ID: HALAWA WELLS P1 (331-023-WL065)**

**Lab Sample ID: 380-22076-1**

Date Collected: 09/26/22 10:10

Matrix: Drinking Water

Date Received: 09/27/22 10:00

PWSID Number: HI0000331

**Method: 625 PAH Physiol 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 16:49	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Biphenyl	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Chrysene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/29/22 00:00	10/05/22 16:49	1
Fluoranthene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Fluorene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Naphthalene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Perylene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Phenanthrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1
Pyrene	ND		0.005	0.001	µg/L		09/29/22 00:00	10/05/22 16:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	92		45 - 118	09/29/22 00:00	10/05/22 16:49	1
(d10-Phenanthrene)	98		56 - 123	09/29/22 00:00	10/05/22 16:49	1
(d12-Chrysene)	89		36 - 142	09/29/22 00:00	10/05/22 16:49	1
(d12-Perylene)	94		36 - 161	09/29/22 00:00	10/05/22 16:49	1
(d8-Naphthalene)	94		20 - 112	09/29/22 00:00	10/05/22 16:49	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	0.025		mg/L			10/04/22 16:12	1
MOTOR OIL	ND	U	0.05		mg/L			10/04/22 16:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	61		60 - 130		10/04/22 16:12	1
HEXACOSANE	85		60 - 130		10/04/22 16:12	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 19:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	90		60 - 140		09/29/22 19:54	1

**Client Sample ID: TB**

**Lab Sample ID: 380-22076-2**

Date Collected: 09/26/22 10:10

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 20:32	1

# Client Sample Results

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

Job ID: 380-22076-1

**Client Sample ID: TB**

**Lab Sample ID: 380-22076-2**

**Date Collected: 09/26/22 10:10**

**Matrix: Water**

**Date Received: 09/27/22 10:00**

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
BROMOFLUOROBENZENE	89		60 - 140		09/29/22 20:32	1

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

# Action Limit Summary

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

Job ID: 380-22076-1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-22076-1

PWSID Number: HI0000331

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
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

# Surrogate Summary

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

Job ID: 380-22076-1

## 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)
380-22076-1	HALAWA WELLS P1 (331-023-V)	97	105	92
380-22076-1 DU	HALAWA WELLS P1 (331-023-WL065)	96	103	93

**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)
380-22081-B-2-B MS	Matrix Spike	99	108	98
LCS 380-19592/3-A	Lab Control Sample	98	105	98
LCSD 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)				
		Acenaphtl (65-113)	Phenanth (80-111)	CRY (60-139)	NPT (44-119)	PRY (36-161)
100439-B1	Method Blank	92	96	103	76	86
100439-BS1	Lab Control Sample	88	96	96	84	88
100439-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)

## 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)
380-22076-1	HALAWA WELLS P1 (331-023-V)	92	98	89	94	94

**Surrogate Legend**  
 (d10-Acenaphthene) = (d10-Acenaphthene)



# Surrogate Summary

Client: City & County of Honolulu

Job ID: 380-22076-1

Project/Site: RED-HILL

(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

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
380-22076-1	HALAWA WELLS P1 (331-023-V	61	85

#### Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

Matrix: WATER

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
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

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
22DSJ003WC	LCD	79	75
22DSJ003WL	Lab Control Sample	86	86
22I333-01M	380-22076-1 MS	74	85
22I333-01S	380-22076-1 MSD	81	79

#### Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

## 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)
380-22076-1	HALAWA WELLS P1 (331-023-V	90

#### Surrogate Legend

BFB = BROMOFLUOROBENZENE

# Surrogate Summary

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

Job ID: 380-22076-1

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

Matrix: WATER

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

BFB

Lab Sample ID	Client Sample ID
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)

BFB

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)

BFB

Lab Sample ID	Client Sample ID	BFB (60-140)
380-22076-2	TB	89

#### Surrogate Legend

BFB = BROMOFLUOROBENZENE

# QC Sample Results

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

Job ID: 380-22076-1

## 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: 380-22076-1

## 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
1-Methylnaphthalene	ND		0.10	ug/L		10/05/22 09:03	10/06/22 13:45	1
2-Methylnaphthalene	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-Octadecenamamide, (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

# QC Sample Results

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

Job ID: 380-22076-1

## 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'-DDD	1.99	2.05		ug/L		103	70 - 130
2,4'-DDE	1.99	2.13		ug/L		107	70 - 130
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

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-22076-1

## 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
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
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
1-Methylnaphthalene	1.99	1.99		ug/L		100	70 - 130
2-Methylnaphthalene	1.99	2.14		ug/L		107	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

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-22076-1

## 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
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
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

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-22076-1

## 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	Limit
							Limits	RPD		
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	
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	
1-Methylnaphthalene	1.99	2.04		ug/L		103	70 - 130	3	20	
2-Methylnaphthalene	1.99	2.18		ug/L		110	70 - 130	2	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
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	RPD
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	

Eurofins Eaton Monrovia



# QC Sample Results

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

Job ID: 380-22076-1

## 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				
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
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

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-22076-1

## 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
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
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
1-Methylnaphthalene	0.0992	0.109		ug/L		110	50 - 150
2-Methylnaphthalene	0.0992	0.104		ug/L		105	50 - 150

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

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

**Client Sample ID: Matrix Spike**  
**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

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-22076-1

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

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

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 19592**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
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
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

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-22076-1

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

**Lab Sample ID: 380-22081-B-2-B MS**

**Matrix: Water**

**Analysis Batch: 19817**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 19592**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
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
1-Methylnaphthalene	ND		1.97	2.00		ug/L		102	70 - 130
2-Methylnaphthalene	ND		1.97	2.14		ug/L		109	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
2-Nitro-m-xylene	99		70 - 130
Triphenylphosphate	108		70 - 130
Perylene-d12	98		70 - 130

**Lab Sample ID: 380-22076-1 DU**

**Matrix: Drinking Water**

**Analysis Batch: 19817**

**Client Sample ID: HALAWA WELLS P1 (331-023-WL065)**

**Prep Type: Total/NA**

**Prep Batch: 19592**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	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

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-22076-1

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

**Lab Sample ID: 380-22076-1 DU**  
**Matrix: Drinking Water**  
**Analysis Batch: 19817**

**Client Sample ID: HALAWA WELLS P1 (331-023-WL065)**  
**Prep Type: Total/NA**  
**Prep Batch: 19592**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
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
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
1-Methylnaphthalene	ND		ND		ug/L		NC	20
2-Methylnaphthalene	ND		ND		ug/L		NC	20

# QC Sample Results

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

Job ID: 380-22076-1

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

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

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)  
Prep Type: Total/NA  
Prep Batch: 19592

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

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

Lab Sample ID: 100439-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	%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

# QC Sample Results

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

Job ID: 380-22076-1

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

**Lab Sample ID: 100439-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
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	LCS 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: 100439-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

Eurofins Eaton Monrovia



# QC Sample Results

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

Job ID: 380-22076-1

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

**Lab Sample ID: 100439-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		
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	
Dibenz[a,h]anthracene	0.5	0.595		µg/L		119	55 - 150	13	30	
Dibenzo[a,l]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	

Eurofins Eaton Monrovia



# QC Sample Results

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

Job ID: 380-22076-1

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

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

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

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

**Lab Sample ID: 22I333-01M**  
**Matrix: WATER**  
**Analysis Batch: 22DSJ003W**

**Client Sample ID: 380-22076-1 MS**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
DIESEL	ND		2.6	2.47		mg/L		95	50 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
BROMOBENZENE	74		60 - 130
HEXACOSANE	85		60 - 130

**Lab Sample ID: 22I333-01S**  
**Matrix: WATER**  
**Analysis Batch: 22DSJ003W**

**Client Sample ID: 380-22076-1 MSD**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
DIESEL	ND		2.78	2.37		mg/L		85	50 - 130	4	30

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
BROMOBENZENE	81		60 - 130
HEXACOSANE	79		60 - 130

## 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

	MB	MB							
Surrogate	%Recovery	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

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
BROMOFLUOROBENZENE	116		70 - 130

# QC Association Summary

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

Job ID: 380-22076-1

## GC/MS Semi VOA

### Prep Batch: 19592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22076-1	HALAWA WELLS P1 (331-023-WL065)	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-B-2-B MS	Matrix Spike	Total/NA	Water	525.2	
380-22076-1 DU	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	525.2	

### Analysis Batch: 19817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22076-1	HALAWA WELLS P1 (331-023-WL065)	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-B-2-B MS	Matrix Spike	Total/NA	Water	525.2	19592
380-22076-1 DU	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	525.2	19592

## Subcontract

### Analysis Batch: O-38136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22076-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-38136_P
100439-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-38136_P
100439-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-38136_P
100439-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
380-22076-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	8015 Diesel LL (EAL) and Motor Oil	
22DSJ003WB	Method Blank	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	
22DSJ003WL	Lab Control Sample	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	
22I333-01M	380-22076-1 MS	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	
22I333-01S	380-22076-1 MSD	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	

### Analysis Batch: 22VG3919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22076-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

Eurofins Eaton Monrovia

# QC Association Summary

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

Job ID: 380-22076-1

## Subcontract (Continued)

### Analysis Batch: 22VG39119 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22076-2	TB	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)	

### Prep Batch: O-38136\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-22076-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	EPA_625	
100439-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
100439-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
100439-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	



# Lab Chronicle

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

Job ID: 380-22076-1

**Client Sample ID: HALAWA WELLS P1 (331-023-WL065)**

**Lab Sample ID: 380-22076-1**

**Date Collected: 09/26/22 10:10**

**Matrix: Drinking 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	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 14:05
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 16:49
Total/NA	Analysis	8015 Diesel LL (EAL) and Motor Oil		1	22DSJ003W	SDees		10/04/22 16:12
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VG39119	SDees		09/29/22 19:54

**Client Sample ID: TB**

**Lab Sample ID: 380-22076-2**

**Date Collected: 09/26/22 10:10**

**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	22VG39119	SDees		09/29/22 20:32

**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: 380-22076-1

## 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	1-Methylnaphthalene
525.2	525.2	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	2-Methylnaphthalene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525.2	525.2	Drinking Water	4,4'-DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	Anthracene
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[b]fluoranthene
525.2	525.2	Drinking Water	Benzo[g,h,i]perylene
525.2	525.2	Drinking Water	Benzo[k]fluoranthene
525.2	525.2	Drinking Water	beta-BHC
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	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

# Accreditation/Certification Summary

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

Job ID: 380-22076-1

## 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
-----------	---------	-----------------------	-----------------

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	gamma-Chlordane
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
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: 380-22076-1

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: 380-22076-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-22076-1	HALAWA WELLS P1 (331-023-WL065)	Drinking Water	09/26/22 10:10	09/27/22 10:00	HI0000331
380-22076-2	TB	Water	09/26/22 10:10	09/27/22 10:00	

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





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

Date: 10-17-2022  
EMAX Batch No.: 221333

Attn: Jackie Contreras

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

Subject: Laboratory Report  
Project: 380-22076

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
380-22076-1	1333-01	09/26/22	WATER	TPH GASOLINE TPH DIESEL & MOTOR OIL
380-22076-2	1333-02	09/26/22	WATER	TPH GASOLINE
380-22076-1MS	1333-01M	09/26/22	WATER	TPH DIESEL
380-22076-1MSD	1333-01S	09/26/22	WATER	TPH DIESEL

The results are summarized on the following pages.

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

Sincerely yours,

*Caspar J. Pang*

Caspar J. Pang  
Laboratory Director

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

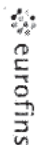
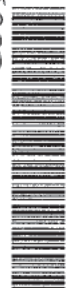
EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912022-22  
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing  
California ELAP Accredited Certificate Number 2672

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

**Chain of Custody Record**

221333



Environment Testing  
 America

**Client Information (Sub Contract Lab)**

Client Contact: Shipping/Receiving  
 Company: EMAX Laboratories Inc  
 Address: 3051 Fujita Street,  
 City: Torrance  
 State, Zip: CA, 90505  
 Phone:  
 Email:  
 Project Name: RED-HILL  
 Site: Honolulu BWS Sites

Sampler: Arada, Rachelle  
 E-Mail: Rachelle.Arada@el.eurofins.com  
 Accreditations Required (See note): State - Hawaii

Due Date Requested: 10/11/2022  
 TAT Requested (days):  
 Carrier Tracking No(s):  
 State of Origin: Hawaii

COC No: 380-2297-1  
 Page: Page 1 of 1  
 Job #: 380-22076-1

Analysis Requested:  
 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

Preservation Codes:  
 A - HCL  
 B - NaOH  
 C - Zn Acetate  
 D - Nitric Acid  
 E - NaHSO4  
 F - MeOH  
 G - Anchoher  
 H - Ascorbic Acid  
 I - Ice  
 J - D1 Water  
 K - EDTA  
 L - EDA  
 M - Hexane  
 N - None  
 O - AsNaO2  
 P - Na2CO3  
 Q - Na2SO3  
 R - Na2S2O3  
 S - H2SO4  
 T - TSP Dodecahydrate  
 U - Acetone  
 V - MCAA  
 W - pH 4-5  
 Y - Trizma  
 Z - other (specify)

Special Instructions/Note:  
 See Attached Instructions  
 See Attached Instructions

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab, A=Air)	MATRIX (W=Water, S=Solid, O=Vascular, BT=Tissue, A=All)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8015 Gas (Purgeable) LL (EAL)) 8015 Gas (Purgeable) LL (EAL)	SUB (8015 Diesel LL (EAL) and Motor Oil) 8015 Diesel LL (EAL) and Motor Oil	Total Number of containers	Special Instructions/Note
HALAWA WELLS P1 (331-023-WL065) (380-22076-1)	9/28/22	10:10	Water	Water	X	X			9	See Attached Instructions
TB (380-22076-2)	9/28/22	10:10	Water	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 out subcontracted 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  Dispose By Lab  Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: *Anna Beckw* Date/Time: 9-28-22 10:08 Company: *EMAX*  
 Relinquished by: \_\_\_\_\_ Date/Time: 9-28-22 15:20 Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_  
 REPORT ID: 221333  
 Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_



Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input checked="" type="checkbox"/> Others <i>Area Fast</i>	Airbill / Tracking Number	ECN <i>221333</i>
<input type="checkbox"/> EMAX Courier <input type="checkbox"/> Client Delivery		Recipient <i>JHOWIN Zamora</i>
		Date <i>9/28/22</i> Time <i>1510</i>

**COC INSPECTION**

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

Note: \_\_\_\_\_

**PACKAGING INSPECTION**

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 <i>1-8</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>210760237</i>	C - S/N _____
			<i>D - S/N 210760272</i>

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

Note: \_\_\_\_\_

**DISCREPANCIES**

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	418	D1	PAH is not mentioned in COC	<i>28. R 1</i>
1	418	D1	PAH mentioned on label. *	
2	910	P7	Date & time reads 8/3/2022 12mm	
<i>29/28/22</i>				

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. *23 9/29/22*

NOTES/OBSERVATIONS: *\* Unpreserved*

SAMPLE MATRIX IS DRINKING WATER?  YES  NO

- LEGEND:**
- |   |   |   |
|---|---|---|
| Code Description-Sample Management                | Code Description-Sample Management            | Code Description-Sample Management  |
| <i>D1</i> Analysis is not indicated in <u>COC</u> | 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                 | 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   |
| <i>D7</i> 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 <i>Informed client</i>   |
| D9 Sample received is not listed in COC           | D21 No sample for moisture determination      | R9 _____  |
| D10 No initial/date on corrections in COC/label   | D22 _____                                     | 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>[Signature]</i>	PM <i>[Signature]</i>
Date <i>9/28/22</i>	Date <i>9/28/22</i>	Date <i>9/29/22</i>

## 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

380-22076

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

SDG#: 221333





CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-22076

SDG : 22I333

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

A total of two(2) 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

Client : EUROFINS EATON ANALYTICAL  
 Project : 380-22076

SDG NO. : 221333  
 Instrument ID : GCT039

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Prep.		Notes
							Data FN	Batch	
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
380-22076-1	1333-01	1	NA	09/29/2219:54	09/29/2219:54	E129018A	E129014A	22VG39119	Field Sample
380-22076-2	1333-02	1	NA	09/29/2220:32	09/29/2220:32	E129019A	E129014A	22VG39119	Field Sample

FN - Filename  
 % Moist - Percent Moisture



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

# SAMPLE RESULTS



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

=====  
Client : EUROFINS EATON ANALYTICAL Date Collected: 09/26/22 10:10  
Project : 380-22076 Date Received: 09/28/22  
Batch No. : 221333 Date Extracted: 09/29/22 19:54  
Sample ID : 380-22076-1 Date Analyzed: 09/29/22 19:54  
Lab Samp ID: 1333-01 Dilution Factor: 1  
Lab File ID: E129018A 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	0.0360	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 10:10
Project     : 380-22076                    Date Received: 09/28/22
Batch No.   : 221333                       Date Extracted: 09/29/22 20:32
Sample ID   : 380-22076-2                 Date Analyzed: 09/29/22 20:32
Lab Samp ID: 1333-02                      Dilution Factor: 1
Lab File ID: E129019A                     Matrix: WATER
Ext Btch ID: 22VG39119                   % 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	0.0354	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

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

# QC SUMMARIES

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/29/22 12:18
Project     : 380-22076                   Date Received: 09/29/22
Batch No.   : 221333                       Date Extracted: 09/29/22 12:18
Sample ID   : MBLK1W                       Date Analyzed: 09/29/22 12:18
Lab Samp ID: VG39119B                      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 : 380-22076  
BATCH NO. : 221333  
METHOD : 5030B/8015B

```

=====
MATRIX      : WATER                               % MOISTURE:NA
DILUTION FACTOR: 1                               1
SAMPLE ID   : MBLK1W                             LCS1W         LCD1W
LAB SAMPLE ID : VG39I19B                         VG39I19L     VG39I19C
LAB FILE ID  : E129006A                         E129007A     E129008A
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   : 22VG39I19                         22VG39I19     22VG39I19
CALIBRATION REF: E129004A                       E129004A     E129004A
  
```

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
SAMPLE ID   : 380-22081-1                         380-22081-1MS
LAB SAMPLE ID : 1332-01                           1332-01S
LAB FILE ID  : E129009A                           E129010A
DATE PREPARED : 09/29/22 14:12                     09/29/22 15:28
DATE ANALYZED : 09/29/22 14:12                     09/29/22 15:28
PREP BATCH   : 22VG39119                           22VG39119
CALIBRATION REF: 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

380-22076

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 221333



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-22076

SDG : 22I333

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was 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

The sample was 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

The sample was 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 : 380-22076  
 SDG NO. : 221333  
 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
380-22076-1MS	1333-01M	1	NA	10/03/2216:31	10/01/2215:45	LJ03020A	LJ03003A	22DSJ003W	Matrix Spike Sample (MS)
380-22076-1MSD	1333-01S	1	NA	10/03/2216:49	10/01/2215:45	LJ03021A	LJ03003A	22DSJ003W	MS Duplicate (MSD)
380-22076-1	1333-01	1	NA	10/04/2216:12	10/01/2215:45	LJ03097A	LJ03089A	22DSJ003W	Field Sample

FN - Filename  
 % Moist - Percent Moisture



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

# SAMPLE RESULTS

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/26/22 10:10
Project    : 380-22076                   Date Received: 09/28/22
Batch No.  : 221333                       Date Extracted: 10/01/22 15:45
Sample ID  : 380-22076-1                 Date Analyzed: 10/04/22 16:12
Lab Samp ID: 221333-01                   Dilution Factor: 1
Lab File ID: LJ03097A                    Matrix: WATER
Ext Btch ID: 22DSJ003W                    % Moisture: NA
Calib. Ref.: LJ03089A                    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	0.304	0.500	61	60-130
Hexacosane	0.106	0.125	85	60-130

Notes:  
Parameter H-C Range  
Diesel C10-C24  
Motor Oil C24-C36  
Reported ND at RL quantitated per pattern recognition.

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

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

# QC SUMMARIES

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 10/01/22 15:45
Project    : 380-22076                   Date Received: 10/01/22
Batch No.  : 221333                       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 : 380-22076  
BATCH NO. : 221333  
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 : 380-22076-1 380-22076-1MS 380-22076-1MSD
LAB SAMPLE ID : 221333-01 221333-01M 221333-01S
LAB FILE ID : LJ03097A LJ03020A LJ03021A
DATE PREPARED : 10/01/22 15:45 10/01/22 15:45 10/01/22 15:45
DATE ANALYZED : 10/04/22 16:12 10/03/22 16:31 10/03/22 16:49
PREP BATCH : 22DSJ003W 22DSJ003W 22DSJ003W
CALIBRATION REF: LJ03089A LJ03003A 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 # 380-22076-1  
Physis Project ID: 1407003-304

Dear Debbie,


Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 9/28/2022. A total of 1 sample was received for analysis in accordance with the attached chain of custody (COC). Per the COC, the sample was 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: 1407003-304

RED-HILL Project # 38001111 Job # 380-22076-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
100440	HALAWA WELLS P1	331-023-WL065 (380-22076-1)	9/26/2022	10:10	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 MS<sub>1</sub>/MS<sub>2</sub>, BS<sub>1</sub>/BS<sub>2</sub>, LCS<sub>1</sub>/LCS<sub>2</sub>, LCM<sub>1</sub>/LCM<sub>2</sub>, CRM<sub>1</sub>/CRM<sub>2</sub>, surrogate spikes and/or replicate project sample analysis (R<sub>1</sub>/R<sub>2</sub>) 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.

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

## PHYSIS QUALIFIER CODES

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

---

## CASE NARRATIVE

### QUALIFIER NOTES

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

#### **ND**

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

# BIANALYTICALS

# REPORT

TERRA AURA  
ENVIRONMENTAL LABORATORIES, INC.

*Innovative Solutions for Nature*

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

## Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 100440-R1</b>	<b>HALAWA WELLS P1 331-023-WL065</b>		<b>Matrix: Samplewater</b>				<b>Sampled:</b>	<b>26-Sep-22 10:10</b>	<b>Received:</b>	<b>28-Sep-22</b>	
Disalicylidenepropanediamine	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	
<b>Sample ID: 100440-R1</b>	<b>HALAWA WELLS P1 331-023-WL065 Matrix: Samplewater</b>						<b>Sampled: 26-Sep-22 10:10</b>		<b>Received: 28-Sep-22</b>			
(d10-Acenaphthene)	EPA 625.1	% Recovery	92	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	94	1			Total		0-38136	29-Sep-22	05-Oct-22	
(d8-Naphthalene)	EPA 625.1	% Recovery	94	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	
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	29-Sep-22	05-Oct-22	
D benzothiophene	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.

*Innovative Solutions for Nature*

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

## Base/Neutral Extractable Compounds

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE SOURCE		ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
<b>Sample ID: 100439-B1</b>		<b>QAQC Procedural Blank</b>				<b>Matrix: BlankMatrix</b>		<b>Sampled:</b>		<b>Received:</b>			
		Method: EPA 625.1		Batch ID: O-38136		Prepared: 26-Sep-22		Analyzed: 05-Oct-22					
Disalicylideneprapanediamin	Total	ND	1	0.05	0.1	µg/L							
<b>Sample ID: 100439-BS1</b>		<b>QAQC Procedural Blank</b>				<b>Matrix: BlankMatrix</b>		<b>Sampled:</b>		<b>Received:</b>			
		Method: EPA 625.1		Batch ID: O-38136		Prepared: 26-Sep-22		Analyzed: 05-Oct-22					
Disalicylideneprapanediamin	Total	37	1	0.05	0.1	µg/L	50	0	74	50 - 150%	PASS		
<b>Sample ID: 100439-BS2</b>		<b>QAQC Procedural Blank</b>				<b>Matrix: BlankMatrix</b>		<b>Sampled:</b>		<b>Received:</b>			
		Method: EPA 625.1		Batch ID: O-38136		Prepared: 26-Sep-22		Analyzed: 05-Oct-22					
Disalicylideneprapanediamin	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 CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
<b>Sample ID: 100439-B1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>		<b>Sampled:</b>		<b>Received:</b>		
	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 CODE
							LEVEL	RESULT	%	LIMITS	%	LIMITS
<b>Sample ID: 100439-BS1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>		
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 <sub>c</sub>
							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 CODEc		
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
<b>Sample ID: 100439-BS2</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>			<b>Received:</b>				
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 <sub>c</sub>	
							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

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

**PHYSIS**

**TENTATIVELY**

**IDENTIFIED COMPOUNDS**

ENVIRONMENTAL LABORATORIES, INC.

*Innovative Solutions for Nature*

Sample ID: 100440

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.4321	7.1148	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

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

Sample ID: Lab Blank Batch O-38136

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.4297	9.1660	1111	Anthracene-D10-	1517-22-2	97
No TICs were detected in this sample per the criteria.					

Concentration estimated using the response for Anthracene-d10

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

# PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

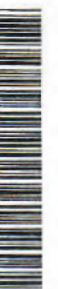
*Innovative Solutions for Nature*

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



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

**Chain of Custody Record**



**eurofins**  
 Environment Testing  
 America

**Client Information (Sub Contract Lab)**  
 Client Contact: **Arada, Rachelle** Lab Pk.: **Arada, Rachelle**  
 Shipping/Receiving: **Rachelle.Arada@eurofins.com** E-Mail: **Rachelle.Arada@eurofins.com** State of Origin: **Hawaii**  
 Company: **Physis Environmental Laboratories** Accreditations Required (See note): **State - Hawaii**  
 Address: **1904 Wright Circle,** Due Date Requested: **10/1/2022**  
 City: **Anaheim** TAT Requested (days):  
 State, Zip: **CA, 92806** PO #:  
 Phone: **W/O #:**  
 Email: **Project #:**  
**RED-HILL** **38001111**  
 Site: **Honolulu BWS Sites** SSON#: **380-22076-1**

**Sample Identification - Client ID (Lab ID)**  
**HALAWA WELLS P1 (331-023-WL065) (380-22076-1)** Sample Date: **9/26/22** Time: **10:10** Location: **Hawaii**  
 Sample Type (G=comp, G=grab): **Water** Matrix: **MATRIX (Weaver, Sealed, Overseal, BT-Tissam, Analy)**  
 Field Filled Sample (Yes or No): **X**  
 Perform MS/MSD (Yes or No): **X**  
 SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs  
 Total Number of Containers: **2**  
 Special Instructions/Note: **See Attached Instructions**

**Analysis Requested**  
 COC No.: **380-22400.1**  
 Page: **Page 1 of 1**  
 Job #: **380-22076-1**  
 Preservation Codes:  
 A - HCL  
 B - NaOH  
 C - Zn Acetate  
 D - Nitric Acid  
 E - NaHSO4  
 F - NaOH  
 G - Ascorbic Acid  
 H - Ascorbic Acid  
 I - Ice  
 J - DI Water  
 K - EDTA  
 L - EDA  
 M - Hexane  
 N - None  
 O - AsNaO2  
 P - Na2OAS  
 Q - Na2SO3  
 R - Na2S2O3  
 S - H2SO4  
 T - TSP Dodecahydrate  
 U - Acetone  
 V - MCAA  
 W - pH 4.5  
 Y - Triana  
 Z - other (Specify)  
 Other:

Sample ID	Sample Date	Sample Time	Sample Type (G=comp, G=grab)	Matrix	Field Filled Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Total Number of Containers	Special Instructions/Note
HALAWA WELLS P1 (331-023-WL065) (380-22076-1)	9/26/22	10:10	Water	MATRIX (Weaver, Sealed, Overseal, BT-Tissam, Analy)	X	X	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	2	See Attached Instructions

**Possible Hazard Identification**  
 Deliverable Requested: **I, II, III, IV, Other (specify)** Primary Deliverable Rank: **2**  
 Empty Kit Relinquished by: **[Signature]** Date: **9-28-22** Time: **1059**  
 Relinquished by: **[Signature]** Date/Time: **9-28-22 14:25** Company: **EAL**  
 Relinquished by: **[Signature]** Date/Time: **9-28-22 14:25** Company: **Physis's**  
 Custody Seals Intact: **Δ Yes Δ No** Custody Seal No.: **9-28-22 12**  
 Cooler Temperature(s) °C and Other Remarks: **9-28-22 12**  
 Method of Shipment: **Archive For** Months: **12**  
 Special Instructions/OC Requirements: **Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

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 institutions 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.



Project Iteration ID: 1407003-304  
 Client Name: Eurofins Eaton Analytical  
 Project Name: RED-HILL Project # 38001111 Job # 380-22076-1  
 COC Page Number: 2 of 2  
 Bottle Label Color: NA

**Sample Receipt Summary**

Receiving Info

1. Initials Received By: AD
2. Date Received: 9/25/22
3. Time Received: 14:25
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: AD

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:





Eaton Analytical

# CHAIN OF CUSTODY RECORD

750 Royal Oaks Drive, Suite 100  
Monrovia, CA 91016-3629

Phone: 626 386 1100  
Fax: 626 386 1101

800 566 LABS (800 566 5227)

EUROFINS EATON ANALYTICAL USE ONLY:

**LOGIN COMMENTS:** \_\_\_\_\_

**SAMPLES CHECKED AGAINST COC BY:** CP

**SAMPLES LOGGED IN BY:** \_\_\_\_\_

**SAMPLE TEMP RECEIVED AT:**

Colton / No. California / Arizona \_\_\_\_\_ °C (Compliance: 4 ± 2 °C)

Monrovia 19 °C (Compliance: 4 ± 2 °C)

**CONDITION OF BLUE ICE:** Frozen  Partially Frozen \_\_\_\_\_ Thawed \_\_\_\_\_ Wet Ice \_\_\_\_\_ No Ice \_\_\_\_\_

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

TO BE COMPLETED BY SAMPLER:

<b>COMPANY/AGENCY NAME:</b> BWS HONOLULU		<b>PROJECT CODE:</b> Red Hill Special		<b>COMPLIANCE SAMPLES</b> <input type="checkbox"/> <b>NON-COMPLIANCE SAMPLES</b> <input checked="" type="checkbox"/>		<b>REGULATION INVOLVED:</b> _____	
<b>EEA CLIENT CODE:</b> _____		<b>COC ID:</b> _____		<b>SAMPLE GROUP:</b> Weekly_RED_HILL (2022)		<b>Type of samples (circle one):</b> ROUTINE <input type="checkbox"/> <b>SPECIAL</b> <input checked="" type="checkbox"/> CONFIRMATION <input type="checkbox"/> (eg. SDWA, Phase V, NPDES, FDA....)	
<b>TAT requested: rush by adv notice only</b>		STD ___ 1 wk ___ X ___ 3 day ___ 2 day ___ 1 day ___		<b>SEE ATTACHED BOTTLE ORDER FOR ANALYSES</b> <input type="checkbox"/> (check for yes), <b>OR</b>			
<b>list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)</b>							
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
09/26/22	1010	Halawa Wells Pump 1	331-023	RGW			380-22076 COC
							Temp Blank: <u>1</u> °C

\* **MATRIX TYPES:** RSW = Raw Surface Water    CFW = Chlor(am)inated Finished Water    SEAW = Sea Water    BW = Bottled Water    SO = Soil    O = Other - Please Identify  
 RGW = Raw Ground Water    FW = Other Finished Water    WW = Waste Water    SW = Storm Water    SL = Sludge

SIGNED BY:	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY:		Lesli Laanui	Honolulu Board of Water Supply	9/26/2022	1010
RELINQUISHED BY:		Lesli Laanui	Honolulu Board of Water Supply	9/26/2022	1200
RECEIVED BY:		Mark Urcatia	EEA	9/27/22	1000
RELINQUISHED BY:					
RECEIVED BY:					

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

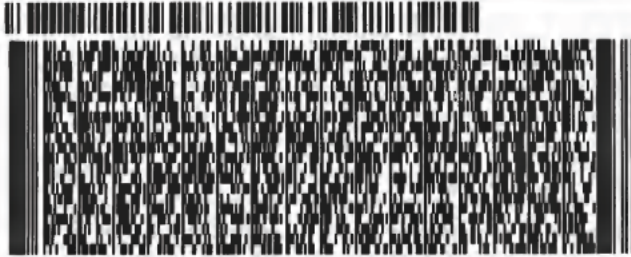
SHIP DATE: 26SEP22  
ACTWGT: 80.00 LB  
CAD: 100205419/INET4530

BILL RECIPIENT

TO C CHUCK  
EUROFINS EATON ANALYTICAL, INC  
750 ROYAL OAKS DR  
SUITE 100  
MONROVIA CA 91016

581 J1/FC08/FE2D

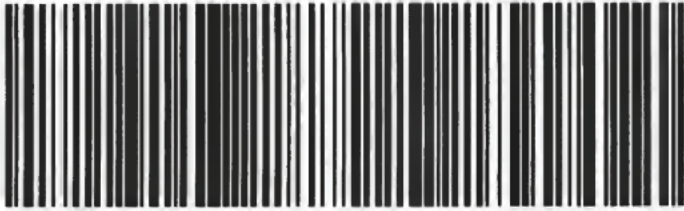
(626) 386-1178 REF:  
INV: DEPT:  
PO:



TUE - 27 SEP 10:30A  
PRIORITY OVERNIGHT

TRK# 7700 3957 2796  
0201

WZ WHPA 91016  
CA-US BUR



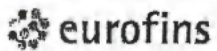
**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
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](http://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.







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 = 630A (Observation= 20 °C) (Corr.Factor 0.1 °C) (Final = 1.9 °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)

Exempt from headspace concerns: Methods 515.4, HAA(6251,552), 505, SPME, @CH, 532LCMS, 555, 536, Anatoxin, LCMS methods using 40 ml vials, International clients:

Samp ID	Bottle #	None/<6 mm	>6mm	Test	Samp ID	Bottle #	None/<6 mm	>6mm	Test	Samp ID	Bottle #	None/<6 mm	>6mm	Test	Samp ID	Bottle #	None/<6 mm	>6mm	Test	

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

SIGNATURE <i>[Signature]</i>	PRINT NAME Mark Urratia	COMPANY/TITLE Eurofins Eaton Analytical	DATE 9/27/22	TIME 1000
SIGNATURE	PRINT NAME	COMPANY/TITLE Eurofins Eaton Analytical	DATE	TIME
SAMPLES CHECKED AGAINST COC BY:				

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-22076-1

**Login Number: 22076**  
**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	

