

ANALYTICAL REPORT

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Laboratory Job ID: 380-20931-1
Client Project/Site: RED-HILL
Sampling Event: RUSH Weekly Red Hill

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

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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.
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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 5:49:28 PM





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Definitions/Glossary

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

Job ID: 380-20931-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
^3-	Reporting Limit Check Standard is outside acceptance limits, low biased.
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.
⌘	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

Detection Summary

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

Job ID: 380-20931-1

Client Sample ID: HALAWA SHAFT STATIC (VIEWING POOL) **Lab Sample ID: 380-20931-1**

No Detections.

Client Sample ID: TB:HALAWA SHAFT STATIC (VIEWING POOL) **Lab Sample ID: 380-20931-2**

No Detections.

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

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-20931-1

Client Sample ID: HALAWA SHAFT STATIC (VIEWING POOL)

Lab Sample ID: 380-20931-1

Date Collected: 09/12/22 09:30

Matrix: Drinking Water

Date Received: 09/14/22 10:15

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		09/16/22 08:01	09/19/22 15:21	1
2,4'-DDE	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
2,4'-DDT	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
2,4-Dinitrotoluene	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
2,6-Dinitrotoluene	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
4,4'-DDD	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
4,4'-DDE	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
4,4'-DDT	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Acenaphthene	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Acenaphthylene	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Acetochlor	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Alachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
alpha-BHC	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
alpha-Chlordane	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Anthracene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:21	1
Atrazine	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Benz(a)anthracene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Benzo[a]pyrene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:21	1
Benzo[b]fluoranthene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:21	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Benzo[k]fluoranthene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:21	1
beta-BHC	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Bromacil	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Butachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Butylbenzylphthalate	ND		0.49	ug/L		09/16/22 08:01	09/19/22 15:21	1
Caffeine	ND	^3- *-	0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Chlorobenzilate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Chloroneb	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Chlorothalonil (Draconil, Bravo)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Chlorpyrifos	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Chrysene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:21	1
delta-BHC	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		09/16/22 08:01	09/19/22 15:21	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		09/16/22 08:01	09/19/22 15:21	1
Diazinon (Qualitative)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Diclorvos (DDVP)	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Dieldrin	ND		0.20	ug/L		09/16/22 08:01	09/19/22 15:21	1
Diethylphthalate	ND		0.49	ug/L		09/16/22 08:01	09/19/22 15:21	1
Dimethoate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Dimethylphthalate	ND		0.49	ug/L		09/16/22 08:01	09/19/22 15:21	1
Di-n-butyl phthalate	ND		0.98	ug/L		09/16/22 08:01	09/19/22 15:21	1
Di-n-octyl phthalate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Endosulfan I (Alpha)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Endosulfan II (Beta)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Endosulfan sulfate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Endrin	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Endrin aldehyde	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
EPTC	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1

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Client Sample Results

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

Job ID: 380-20931-1

Client Sample ID: HALAWA SHAFT STATIC (VIEWING POOL)

Lab Sample ID: 380-20931-1

Date Collected: 09/12/22 09:30

Matrix: Drinking Water

Date Received: 09/14/22 10:15

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		09/16/22 08:01	09/19/22 15:21	1
Fluorene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
gamma-Chlordane	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Heptachlor	ND		0.039	ug/L		09/16/22 08:01	09/19/22 15:21	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Hexachlorobenzene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Isophorone	ND		0.49	ug/L		09/16/22 08:01	09/19/22 15:21	1
Lindane	ND		0.039	ug/L		09/16/22 08:01	09/19/22 15:21	1
Malathion	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Methoxychlor	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Metolachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Metribuzin	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Molinate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Naphthalene	ND		0.29	ug/L		09/16/22 08:01	09/19/22 15:21	1
Parathion	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Pendimethalin (Penoxaline)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		09/16/22 08:01	09/19/22 15:21	1
Phenanthrene	ND		0.039	ug/L		09/16/22 08:01	09/19/22 15:21	1
Propachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Pyrene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Simazine	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Terbacil	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Terbutylazine	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1
Thiobencarb	ND		0.20	ug/L		09/16/22 08:01	09/19/22 15:21	1
trans-Nonachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:21	1
Trifluralin	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:21	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L				09/16/22 08:01	09/19/22 15:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	93		70 - 130	09/16/22 08:01	09/19/22 15:21	1
Triphenylphosphate	110		70 - 130	09/16/22 08:01	09/19/22 15:21	1
Perylene-d12	102		70 - 130	09/16/22 08:01	09/19/22 15:21	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		09/19/22 00:00	09/27/22 15:39	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Acenaphthene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Anthracene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1

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Client Sample Results

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

Job ID: 380-20931-1

Client Sample ID: HALAWA SHAFT STATIC (VIEWING POOL)

Lab Sample ID: 380-20931-1

Date Collected: 09/12/22 09:30

Matrix: Drinking Water

Date Received: 09/14/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Biphenyl	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Chrysene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/19/22 00:00	09/27/22 15:39	1
Fluoranthene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Fluorene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Naphthalene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Perylene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Phenanthrene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1
Pyrene	ND		0.005	0.001	µg/L		09/19/22 00:00	09/27/22 15:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	86		45 - 118	09/19/22 00:00	09/27/22 15:39	1
(d10-Phenanthrene)	96		56 - 123	09/19/22 00:00	09/27/22 15:39	1
(d12-Chrysene)	105		36 - 142	09/19/22 00:00	09/27/22 15:39	1
(d12-Perylene)	92		36 - 161	09/19/22 00:00	09/27/22 15:39	1
(d8-Naphthalene)	80		20 - 112	09/19/22 00:00	09/27/22 15:39	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			09/22/22 00:25	1
MOTOR OIL	ND	U	0.051		mg/L			09/22/22 00:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	66		60 - 130		09/22/22 00:25	1
HEXACOSANE	75		60 - 130		09/22/22 00:25	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			09/16/22 18:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	94		60 - 140		09/16/22 18:43	1

Client Sample ID: TB:HALAWA SHAFT STATIC (VIEWING POOL)

Lab Sample ID: 380-20931-2

Date Collected: 09/12/22 09:30

Matrix: Water

Date Received: 09/14/22 10:15

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			09/16/22 19:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	89		60 - 140		09/16/22 19:17	1

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Action Limit Summary

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

Job ID: 380-20931-1

Client Sample ID: HALAWA SHAFT STATIC (VIEWING POOL)

Lab Sample ID: 380-20931-1

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-20931-1

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)
380-20931-1	HALAWA SHAFT STATIC (VIEW	93	110	102
380-20931-1 MS	HALAWA SHAFT STATIC (VIEWING POOL)	96	116	100

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)
380-20934-J-1-A DU	Duplicate	96	107	104
LCS 380-17608/3-A	Lab Control Sample	95	99	88
LCSD 380-17608/4-A	Lab Control Sample Dup	94	114	99
MB 380-17608/1-A	Method Blank	95	111	100
MRL 380-17608/2-A	Lab Control Sample	95	111	99

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: 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)
380-20931-1	HALAWA SHAFT STATIC (VIEW	86	96	105	80	92

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: water

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)
100090-B1	Method Blank	87	97	102	75	88
100090-BS1	Lab Control Sample	71	101	103	87	101
100090-BS2	Lab Control Sample Dup	89	101	104	80	103

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

Eurofins Eaton Monrovia

Surrogate Summary

Client: City & County of Honolulu

Job ID: 380-20931-1

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)
380-20931-1	HALAWA SHAFT STATIC (VIEW	66	75

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	XACOSAI
22DSI021WB	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)
22DSI021WL	Lab Control Sample	71	89

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)
380-20931-1	HALAWA SHAFT STATIC (VIEW	94

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB
22VGH7I04B	Method Blank	

Surrogate Legend

Eurofins Eaton Monrovia

Surrogate Summary

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

Job ID: 380-20931-1

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)
22VGH7104C	LCD	117
22VGH7104L	Lab Control Sample	119

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-20931-2	TB:HALAWA SHAFT STATIC (VI	89

Surrogate Legend

BFB = BROMOFLUOROBENZENE

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: MB 380-17608/1-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 17608

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
2,4'-DDD	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
2,4'-DDE	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
2,4'-DDT	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
2,4-Dinitrotoluene	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
2,6-Dinitrotoluene	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
4,4'-DDD	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
4,4'-DDE	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
4,4'-DDT	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Acenaphthene	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Acenaphthylene	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Acetochlor	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Alachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
alpha-BHC	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
alpha-Chlordane	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Anthracene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:00	1
Atrazine	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Benz(a)anthracene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Benzo[a]pyrene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:00	1
Benzo[b]fluoranthene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:00	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Benzo[k]fluoranthene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:00	1
beta-BHC	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Bromacil	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Butachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Butylbenzylphthalate	ND		0.49	ug/L		09/16/22 08:01	09/19/22 15:00	1
Caffeine	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Chlorobenzilate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Chloroneb	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Chlorothalonil (Draconil, Bravo)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Chlorpyrifos	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Chrysene	ND		0.020	ug/L		09/16/22 08:01	09/19/22 15:00	1
delta-BHC	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		09/16/22 08:01	09/19/22 15:00	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		09/16/22 08:01	09/19/22 15:00	1
Diazinon (Qualitative)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Diclorvos (DDVP)	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Dieldrin	ND		0.20	ug/L		09/16/22 08:01	09/19/22 15:00	1
Diethylphthalate	ND		0.49	ug/L		09/16/22 08:01	09/19/22 15:00	1
Dimethoate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Dimethylphthalate	ND		0.49	ug/L		09/16/22 08:01	09/19/22 15:00	1
Di-n-butyl phthalate	ND		0.98	ug/L		09/16/22 08:01	09/19/22 15:00	1
Di-n-octyl phthalate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Endosulfan I (Alpha)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Endosulfan II (Beta)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Endosulfan sulfate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Endrin	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Endrin aldehyde	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1

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QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: MB 380-17608/1-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 17608

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Fluoranthene	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Fluorene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
gamma-Chlordane	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Heptachlor	ND		0.039	ug/L		09/16/22 08:01	09/19/22 15:00	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Hexachlorobenzene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Isophorone	ND		0.49	ug/L		09/16/22 08:01	09/19/22 15:00	1
Lindane	ND		0.039	ug/L		09/16/22 08:01	09/19/22 15:00	1
Malathion	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Methoxychlor	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Metolachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Metribuzin	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Molinate	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Naphthalene	ND		0.29	ug/L		09/16/22 08:01	09/19/22 15:00	1
Parathion	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Pendimethalin (Penoxaline)	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		09/16/22 08:01	09/19/22 15:00	1
Phenanthrene	ND		0.039	ug/L		09/16/22 08:01	09/19/22 15:00	1
Propachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Pyrene	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Simazine	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Terbacil	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Terbutylazine	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1
Thiobencarb	ND		0.20	ug/L		09/16/22 08:01	09/19/22 15:00	1
trans-Nonachlor	ND		0.049	ug/L		09/16/22 08:01	09/19/22 15:00	1
Trifluralin	ND		0.098	ug/L		09/16/22 08:01	09/19/22 15:00	1

<i>Tentatively Identified Compound</i>	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
4-Octen-3-one	0.561	T J N	ug/L		2.36	14129-48-7	09/16/22 08:01	09/19/22 15:00	1
Decane	1.30	T J N	ug/L		2.47	124-18-5	09/16/22 08:01	09/19/22 15:00	1
Cyclopentasiloxane, decamethyl-	0.663	T J N	ug/L		2.75	541-02-6	09/16/22 08:01	09/19/22 15:00	1
n-Hexadecanoic acid	0.824	T J N	ug/L		5.91	57-10-3	09/16/22 08:01	09/19/22 15:00	1
Octadecanoic acid	0.684	T J N	ug/L		6.61	57-11-4	09/16/22 08:01	09/19/22 15:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	95		70 - 130	09/16/22 08:01	09/19/22 15:00	1
Triphenylphosphate	111		70 - 130	09/16/22 08:01	09/19/22 15:00	1
Perylene-d12	100		70 - 130	09/16/22 08:01	09/19/22 15:00	1

Lab Sample ID: LCS 380-17608/3-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.97	2.14		ug/L		109	70 - 130

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: LCS 380-17608/3-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDE	1.97	1.98		ug/L		101	70 - 130
2,4'-DDT	1.97	2.15		ug/L		109	70 - 130
2,4-Dinitrotoluene	1.97	1.85		ug/L		94	70 - 130
2,6-Dinitrotoluene	1.97	1.83		ug/L		93	70 - 130
4,4'-DDD	1.97	2.17		ug/L		110	70 - 130
4,4'-DDE	1.97	2.34		ug/L		119	70 - 130
4,4'-DDT	1.97	1.94		ug/L		99	70 - 130
Acenaphthene	1.97	2.09		ug/L		106	70 - 130
Acenaphthylene	1.97	2.04		ug/L		104	70 - 130
Acetochlor	1.97	1.92		ug/L		97	70 - 130
Alachlor	1.97	1.99		ug/L		101	70 - 130
alpha-BHC	1.97	2.27		ug/L		115	70 - 130
alpha-Chlordane	1.97	2.27		ug/L		115	70 - 130
Anthracene	1.97	2.18		ug/L		111	70 - 130
Atrazine	1.97	2.22		ug/L		113	70 - 130
Benz(a)anthracene	1.97	1.89		ug/L		96	70 - 130
Benzo[a]pyrene	1.97	2.01		ug/L		102	70 - 130
Benzo[b]fluoranthene	1.97	2.21		ug/L		113	70 - 130
Benzo[g,h,i]perylene	1.97	2.20		ug/L		112	70 - 130
Benzo[k]fluoranthene	1.97	2.12		ug/L		108	70 - 130
beta-BHC	1.97	2.09		ug/L		106	70 - 130
Bromacil	1.97	1.67		ug/L		85	70 - 130
Butachlor	1.97	2.25		ug/L		115	70 - 130
Butylbenzylphthalate	1.97	2.19		ug/L		111	70 - 130
Caffeine	1.97	0.824	*-	ug/L		42	45 - 137
Chlorobenzilate	1.97	2.19		ug/L		111	70 - 130
Chloroneb	1.97	2.25		ug/L		114	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	2.28		ug/L		116	70 - 130
Chlorpyrifos	1.97	2.06		ug/L		105	70 - 130
Chrysene	1.97	2.27		ug/L		115	70 - 130
delta-BHC	1.97	1.95		ug/L		99	70 - 130
Di(2-ethylhexyl)adipate	1.97	2.37		ug/L		121	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	2.46		ug/L		125	70 - 130
Diazinon (Qualitative)	1.97	1.84		ug/L		94	15 - 132
Dibenz(a,h)anthracene	1.97	2.18		ug/L		111	70 - 130
Diclorvos (DDVP)	1.97	2.27		ug/L		115	70 - 130
Dieldrin	1.97	2.02		ug/L		103	70 - 130
Diethylphthalate	1.97	2.27		ug/L		116	70 - 130
Dimethoate	1.97	0.721		ug/L		37	35 - 100
Dimethylphthalate	1.97	2.28		ug/L		116	70 - 130
Di-n-butyl phthalate	3.93	4.02		ug/L		102	70 - 130
Di-n-octyl phthalate	1.97	2.08		ug/L		106	70 - 130
Endosulfan I (Alpha)	1.97	2.03		ug/L		103	70 - 130
Endosulfan II (Beta)	1.97	2.10		ug/L		107	70 - 130
Endosulfan sulfate	1.97	2.08		ug/L		106	70 - 130
Endrin	1.97	2.20		ug/L		112	70 - 130
Endrin aldehyde	1.97	2.20		ug/L		112	70 - 130
EPTC	1.97	2.19		ug/L		111	70 - 130
Fluoranthene	1.97	2.17		ug/L		110	70 - 130

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: LCS 380-17608/3-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluorene	1.97	2.29		ug/L		116	70 - 130
gamma-Chlordane	1.97	2.27		ug/L		115	70 - 130
Heptachlor	1.97	2.18		ug/L		111	70 - 130
Heptachlor epoxide (isomer B)	1.97	2.15		ug/L		109	70 - 130
Hexachlorobenzene	1.97	2.25		ug/L		115	70 - 130
Hexachlorocyclopentadiene	1.97	2.18		ug/L		111	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	2.21		ug/L		113	70 - 130
Isophorone	1.97	1.88		ug/L		95	70 - 130
Lindane	1.97	2.29		ug/L		116	70 - 130
Malathion	1.97	2.37		ug/L		121	70 - 130
Methoxychlor	1.97	2.30		ug/L		117	70 - 130
Metolachlor	1.97	2.17		ug/L		111	70 - 130
Metribuzin	1.97	1.62		ug/L		82	70 - 130
Molinate	1.97	2.26		ug/L		115	70 - 130
Naphthalene	1.97	2.04		ug/L		104	70 - 130
Parathion	1.97	2.14		ug/L		109	70 - 130
Pendimethalin (Penoxaline)	1.97	1.97		ug/L		100	70 - 130
Phenanthrene	1.97	2.15		ug/L		109	70 - 130
Propachlor	1.97	2.23		ug/L		113	70 - 130
Pyrene	1.97	2.20		ug/L		112	70 - 130
Simazine	1.97	1.88		ug/L		96	70 - 130
Terbacil	1.97	1.79		ug/L		91	70 - 130
Terbutylazine	1.97	2.23		ug/L		114	70 - 130
Thiobencarb	1.97	2.10		ug/L		107	70 - 130
trans-Nonachlor	1.97	2.37		ug/L		120	70 - 130
Trifluralin	1.97	2.46		ug/L		125	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	95		70 - 130
Triphenylphosphate	99		70 - 130
Perylene-d12	88		70 - 130

Lab Sample ID: LCSD 380-17608/4-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.97	2.20		ug/L		112	70 - 130	3	20
2,4'-DDE	1.97	2.08		ug/L		105	70 - 130	5	20
2,4'-DDT	1.97	2.27		ug/L		115	70 - 130	5	20
2,4-Dinitrotoluene	1.97	1.82		ug/L		92	70 - 130	2	20
2,6-Dinitrotoluene	1.97	1.76		ug/L		89	70 - 130	4	20
4,4'-DDD	1.97	2.29		ug/L		116	70 - 130	5	20
4,4'-DDE	1.97	2.41		ug/L		122	70 - 130	3	20
4,4'-DDT	1.97	2.11		ug/L		107	70 - 130	8	20
Acenaphthene	1.97	2.02		ug/L		102	70 - 130	3	20
Acenaphthylene	1.97	2.06		ug/L		104	70 - 130	1	20
Acetochlor	1.97	2.13		ug/L		108	70 - 130	11	20

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QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: LCSD 380-17608/4-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Alachlor	1.97	2.10		ug/L		106	70 - 130	5	20	
alpha-BHC	1.97	2.16		ug/L		110	70 - 130	5	20	
alpha-Chlordane	1.97	2.43		ug/L		123	70 - 130	7	20	
Anthracene	1.97	2.19		ug/L		111	70 - 130	1	20	
Atrazine	1.97	2.20		ug/L		111	70 - 130	1	20	
Benz(a)anthracene	1.97	2.14		ug/L		109	70 - 130	13	20	
Benzo[a]pyrene	1.97	2.17		ug/L		110	70 - 130	7	20	
Benzo[b]fluoranthene	1.97	2.24		ug/L		114	70 - 130	1	20	
Benzo[g,h,i]perylene	1.97	2.57		ug/L		130	70 - 130	15	20	
Benzo[k]fluoranthene	1.97	2.18		ug/L		111	70 - 130	3	20	
beta-BHC	1.97	2.13		ug/L		108	70 - 130	2	20	
Bromacil	1.97	1.73		ug/L		88	70 - 130	3	20	
Butachlor	1.97	2.34		ug/L		118	70 - 130	4	20	
Butylbenzylphthalate	1.97	2.33		ug/L		118	70 - 130	6	20	
Caffeine	1.97	0.792	*-	ug/L		40	45 - 137	4	20	
Chlorobenzilate	1.97	2.30		ug/L		117	70 - 130	5	20	
Chloroneb	1.97	2.12		ug/L		107	70 - 130	6	20	
Chlorothalonil (Draconil, Bravo)	1.97	2.45		ug/L		124	70 - 130	7	20	
Chlorpyrifos	1.97	2.16		ug/L		110	70 - 130	5	20	
Chrysene	1.97	2.16		ug/L		109	70 - 130	5	20	
delta-BHC	1.97	2.04		ug/L		103	70 - 130	4	20	
Di(2-ethylhexyl)adipate	1.97	2.52		ug/L		128	70 - 130	6	20	
Bis(2-ethylhexyl) phthalate	1.97	2.28		ug/L		116	70 - 130	7	20	
Diazinon (Qualitative)	1.97	1.92		ug/L		97	15 - 132	4	20	
Dibenz(a,h)anthracene	1.97	2.48		ug/L		126	70 - 130	13	20	
Diclorvos (DDVP)	1.97	2.16		ug/L		110	70 - 130	5	20	
Dieldrin	1.97	2.11		ug/L		107	70 - 130	4	20	
Diethylphthalate	1.97	2.15		ug/L		109	70 - 130	6	20	
Dimethoate	1.97	0.697		ug/L		35	35 - 100	3	20	
Dimethylphthalate	1.97	2.15		ug/L		109	70 - 130	6	20	
Di-n-butyl phthalate	3.95	4.52		ug/L		115	70 - 130	12	20	
Di-n-octyl phthalate	1.97	1.98		ug/L		100	70 - 130	5	20	
Endosulfan I (Alpha)	1.97	2.16		ug/L		109	70 - 130	6	20	
Endosulfan II (Beta)	1.97	2.31		ug/L		117	70 - 130	10	20	
Endosulfan sulfate	1.97	2.26		ug/L		114	70 - 130	8	20	
Endrin	1.97	2.40		ug/L		122	70 - 130	9	20	
Endrin aldehyde	1.97	2.34		ug/L		119	70 - 130	6	20	
EPTC	1.97	2.15		ug/L		109	70 - 130	2	20	
Fluoranthene	1.97	2.28		ug/L		115	70 - 130	5	20	
Fluorene	1.97	2.22		ug/L		112	70 - 130	3	20	
gamma-Chlordane	1.97	2.45		ug/L		124	70 - 130	8	20	
Heptachlor	1.97	2.12		ug/L		107	70 - 130	3	20	
Heptachlor epoxide (isomer B)	1.97	2.40		ug/L		121	70 - 130	11	20	
Hexachlorobenzene	1.97	2.19		ug/L		111	70 - 130	3	20	
Hexachlorocyclopentadiene	1.97	2.13		ug/L		108	70 - 130	2	20	
Indeno[1,2,3-cd]pyrene	1.97	2.50		ug/L		127	70 - 130	12	20	
Isophorone	1.97	2.02		ug/L		103	70 - 130	7	20	
Lindane	1.97	2.18		ug/L		111	70 - 130	5	20	
Malathion	1.97	2.42		ug/L		122	70 - 130	2	20	

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QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: LCSD 380-17608/4-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Methoxychlor	1.97	2.17		ug/L		110	70 - 130	6	20	
Metolachlor	1.97	2.19		ug/L		111	70 - 130	1	20	
Metribuzin	1.97	1.68		ug/L		85	70 - 130	4	20	
Molinate	1.97	2.18		ug/L		110	70 - 130	4	20	
Naphthalene	1.97	1.98		ug/L		101	70 - 130	3	20	
Parathion	1.97	2.21		ug/L		112	70 - 130	3	20	
Pendimethalin (Penoxaline)	1.97	2.11		ug/L		107	70 - 130	7	20	
Phenanthrene	1.97	2.11		ug/L		107	70 - 130	2	20	
Propachlor	1.97	2.15		ug/L		109	70 - 130	4	20	
Pyrene	1.97	2.30		ug/L		117	70 - 130	4	20	
Simazine	1.97	1.89		ug/L		96	70 - 130	0	20	
Terbacil	1.97	1.82		ug/L		92	70 - 130	1	20	
Terbutylazine	1.97	2.29		ug/L		116	70 - 130	3	20	
Thiobencarb	1.97	2.09		ug/L		106	70 - 130	0	20	
trans-Nonachlor	1.97	2.46		ug/L		125	70 - 130	4	20	
Trifluralin	1.97	2.36		ug/L		120	70 - 130	4	20	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	94		70 - 130
Triphenylphosphate	114		70 - 130
Perylene-d12	99		70 - 130

Lab Sample ID: MRL 380-17608/2-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
2,4'-DDD	0.0988	0.126		ug/L		127	50 - 150	
2,4'-DDE	0.0988	0.103		ug/L		104	50 - 150	
2,4'-DDT	0.0988	0.0979	J	ug/L		99	50 - 150	
2,4-Dinitrotoluene	0.0988	0.0665	J	ug/L		67	50 - 150	
2,6-Dinitrotoluene	0.0988	0.0789	J	ug/L		80	50 - 150	
4,4'-DDD	0.0988	0.108		ug/L		109	50 - 150	
4,4'-DDE	0.0988	0.109		ug/L		110	50 - 150	
4,4'-DDT	0.0988	0.124		ug/L		126	50 - 150	
Acenaphthene	0.0988	0.0995		ug/L		101	50 - 150	
Acenaphthylene	0.0988	0.0932	J	ug/L		94	50 - 150	
Acetochlor	0.0494	0.0419	J	ug/L		85	50 - 150	
Alachlor	0.0494	0.0544		ug/L		110	50 - 150	
alpha-BHC	0.0988	0.112		ug/L		113	50 - 150	
alpha-Chlordane	0.0494	0.0629		ug/L		127	50 - 150	
Anthracene	0.0198	0.0224		ug/L		114	50 - 150	
Atrazine	0.0494	ND		ug/L		87	50 - 150	
Benz(a)anthracene	0.0494	0.0721		ug/L		146	50 - 150	
Benzo[a]pyrene	0.0198	0.0186	J	ug/L		94	50 - 150	
Benzo[b]fluoranthene	0.0198	0.0216		ug/L		109	50 - 150	
Benzo[g,h,i]perylene	0.0494	0.0576		ug/L		117	50 - 150	
Benzo[k]fluoranthene	0.0198	0.0203		ug/L		103	50 - 150	

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QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: MRL 380-17608/2-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Spike Added	MRL	MRL	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
beta-BHC	0.0988	0.0999		ug/L		101	50 - 150
Bromacil	0.0988	0.114		ug/L		116	50 - 150
Butachlor	0.0494	0.0555		ug/L		112	50 - 150
Butylbenzylphthalate	0.148	0.204	J	ug/L		138	50 - 150
Caffeine	0.0494	ND	^3-	ug/L		29	50 - 150
Chlorobenzilate	0.0988	0.102		ug/L		104	50 - 150
Chloroneb	0.0988	0.114		ug/L		116	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0988	0.0984	J	ug/L		100	50 - 150
Chlorpyrifos	0.0494	0.0582		ug/L		118	50 - 150
Chrysene	0.0198	0.0218		ug/L		110	50 - 150
delta-BHC	0.0988	0.132		ug/L		134	50 - 150
Di(2-ethylhexyl)adipate	0.296	0.436	J	ug/L		147	50 - 150
Bis(2-ethylhexyl) phthalate	0.593	0.705		ug/L		119	50 - 150
Diazinon (Qualitative)	0.0988	0.0718	J	ug/L		73	15 - 132
Dibenz(a,h)anthracene	0.0494	0.0562		ug/L		114	50 - 150
Diclorvos (DDVP)	0.0494	0.0602		ug/L		122	50 - 150
Dieldrin	0.0988	0.109	J	ug/L		110	50 - 150
Diethylphthalate	0.148	0.182	J	ug/L		123	50 - 150
Dimethoate	0.0988	0.0384	J	ug/L		39	35 - 100
Dimethylphthalate	0.296	0.309	J	ug/L		104	50 - 150
Di-n-butyl phthalate	0.296	0.340	J	ug/L		115	49 - 243
Di-n-octyl phthalate	0.0988	0.117		ug/L		118	50 - 150
Endosulfan I (Alpha)	0.0988	0.122		ug/L		123	50 - 150
Endosulfan II (Beta)	0.0988	0.104		ug/L		105	50 - 150
Endosulfan sulfate	0.0988	0.0999		ug/L		101	50 - 150
Endrin	0.0988	0.113		ug/L		114	50 - 150
Endrin aldehyde	0.0988	0.120		ug/L		122	50 - 150
EPTC	0.0988	0.105		ug/L		107	50 - 150
Fluoranthene	0.0494	0.0577	J	ug/L		117	50 - 150
Fluorene	0.0494	0.0552		ug/L		112	50 - 150
gamma-Chlordane	0.0494	0.0601		ug/L		122	50 - 150
Heptachlor	0.0395	0.0547		ug/L		138	50 - 150
Heptachlor epoxide (isomer B)	0.0494	0.0585		ug/L		118	50 - 150
Hexachlorobenzene	0.0494	0.0636		ug/L		129	50 - 150
Hexachlorocyclopentadiene	0.0494	0.0481	J	ug/L		97	50 - 150
Indeno[1,2,3-cd]pyrene	0.0494	0.0507		ug/L		103	50 - 150
Isophorone	0.0988	0.102	J	ug/L		104	50 - 150
Lindane	0.0494	0.0424		ug/L		86	50 - 150
Malathion	0.0988	0.104		ug/L		105	50 - 150
Methoxychlor	0.0988	0.123		ug/L		124	50 - 150
Metolachlor	0.0494	0.0555		ug/L		112	50 - 150
Metribuzin	0.0494	0.0346	J	ug/L		70	50 - 150
Molinate	0.0988	0.102		ug/L		104	50 - 150
Naphthalene	0.0988	0.105	J	ug/L		106	50 - 150
Parathion	0.0988	0.122		ug/L		124	50 - 150
Pendimethalin (Penoxaline)	0.0988	0.121		ug/L		123	50 - 150
Phenanthrene	0.0198	0.0254	J	ug/L		129	50 - 150
Propachlor	0.0494	0.0507		ug/L		103	50 - 150
Pyrene	0.0494	0.0578		ug/L		117	50 - 150

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QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: MRL 380-17608/2-A
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Simazine	0.0494	0.0384	J	ug/L		78	50 - 150
Terbacil	0.0988	0.105		ug/L		106	50 - 150
Terbutylazine	0.0988	0.0958	J	ug/L		97	50 - 150
Thiobencarb	0.0988	0.117	J	ug/L		119	50 - 150
trans-Nonachlor	0.0494	0.0575		ug/L		117	50 - 150
Trifluralin	0.0988	0.0920	J	ug/L		93	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	95		70 - 130
Triphenylphosphate	111		70 - 130
Perylene-d12	99		70 - 130

Lab Sample ID: 380-20931-1 MS
Matrix: Drinking Water
Analysis Batch: 17745

Client Sample ID: HALAWA SHAFT STATIC (VIEWING POOL)
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		1.99	2.26		ug/L		114	70 - 130
2,4'-DDE	ND		1.99	2.12		ug/L		106	70 - 130
2,4'-DDT	ND		1.99	2.31		ug/L		116	70 - 130
2,4-Dinitrotoluene	ND		1.99	2.04		ug/L		102	70 - 130
2,6-Dinitrotoluene	ND		1.99	1.93		ug/L		97	70 - 130
4,4'-DDD	ND		1.99	2.33		ug/L		117	70 - 130
4,4'-DDE	ND		1.99	2.50		ug/L		126	70 - 130
4,4'-DDT	ND		1.99	2.14		ug/L		107	70 - 130
Acenaphthene	ND		1.99	2.04		ug/L		102	70 - 130
Acenaphthylene	ND		1.99	2.16		ug/L		109	70 - 130
Acetochlor	ND		1.99	2.23		ug/L		112	70 - 130
Alachlor	ND		1.99	2.22		ug/L		111	70 - 130
alpha-BHC	ND		1.99	2.22		ug/L		112	70 - 130
alpha-Chlordane	ND		1.99	2.51		ug/L		126	70 - 130
Anthracene	ND		1.99	2.10		ug/L		106	70 - 130
Atrazine	ND		1.99	2.42		ug/L		121	70 - 130
Benz(a)anthracene	ND		1.99	2.20		ug/L		111	70 - 130
Benzo[a]pyrene	ND		1.99	2.12		ug/L		107	70 - 130
Benzo[b]fluoranthene	ND		1.99	2.32		ug/L		116	70 - 130
Benzo[g,h,i]perylene	ND		1.99	2.59		ug/L		130	70 - 130
Benzo[k]fluoranthene	ND		1.99	2.24		ug/L		113	70 - 130
beta-BHC	ND		1.99	2.22		ug/L		112	70 - 130
Bromacil	ND		1.99	1.96		ug/L		98	70 - 130
Butachlor	ND		1.99	2.44		ug/L		122	70 - 130
Butylbenzylphthalate	ND		1.99	2.40		ug/L		120	70 - 130
Caffeine	ND	^3- *-	1.99	0.976		ug/L		49	46 - 144
Chlorobenzilate	ND		1.99	2.45		ug/L		123	70 - 130
Chloroneb	ND		1.99	2.18		ug/L		110	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		1.99	2.56		ug/L		128	70 - 130
Chlorpyrifos	ND		1.99	2.27		ug/L		114	70 - 130
Chrysene	ND		1.99	2.18		ug/L		109	70 - 130

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: 380-20931-1 MS

Client Sample ID: HALAWA SHAFT STATIC (VIEWING POOL)

Matrix: Drinking Water

Prep Type: Total/NA

Analysis Batch: 17745

Prep Batch: 17608

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
delta-BHC	ND		1.99	2.15		ug/L		108	70 - 130
Di(2-ethylhexyl)adipate	ND		1.99	2.53		ug/L		123	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.99	2.31		ug/L		116	70 - 130
Diazinon (Qualitative)	ND		1.99	2.09		ug/L		105	15 - 132
Dibenz(a,h)anthracene	ND		1.99	2.55		ug/L		128	70 - 130
Diclorvos (DDVP)	ND		1.99	2.26		ug/L		114	70 - 130
Dieldrin	ND		1.99	2.18		ug/L		110	70 - 130
Diethylphthalate	ND		1.99	2.21		ug/L		111	70 - 130
Dimethoate	ND		1.99	0.843		ug/L		42	34 - 111
Dimethylphthalate	ND		1.99	2.24		ug/L		113	70 - 130
Di-n-butyl phthalate	ND		3.98	4.67		ug/L		117	70 - 130
Di-n-octyl phthalate	ND		1.99	1.98		ug/L		99	70 - 130
Endosulfan I (Alpha)	ND		1.99	2.21		ug/L		111	70 - 130
Endosulfan II (Beta)	ND		1.99	2.37		ug/L		119	70 - 130
Endosulfan sulfate	ND		1.99	2.39		ug/L		120	70 - 130
Endrin	ND		1.99	2.27		ug/L		114	70 - 130
Endrin aldehyde	ND		1.99	1.93		ug/L		97	70 - 130
EPTC	ND		1.99	2.18		ug/L		109	70 - 130
Fluoranthene	ND		1.99	2.35		ug/L		118	70 - 130
Fluorene	ND		1.99	2.29		ug/L		115	70 - 130
gamma-Chlordane	ND		1.99	2.58		ug/L		129	70 - 130
Heptachlor	ND		1.99	2.15		ug/L		108	70 - 130
Heptachlor epoxide (isomer B)	ND		1.99	2.50		ug/L		125	70 - 130
Hexachlorobenzene	ND		1.99	2.26		ug/L		113	70 - 130
Hexachlorocyclopentadiene	ND		1.99	2.12		ug/L		106	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.99	2.59		ug/L		130	70 - 130
Isophorone	ND		1.99	2.10		ug/L		105	70 - 130
Lindane	ND		1.99	2.29		ug/L		115	70 - 130
Malathion	ND		1.99	2.51		ug/L		126	70 - 130
Methoxychlor	ND		1.99	2.24		ug/L		112	70 - 130
Metolachlor	ND		1.99	2.29		ug/L		115	70 - 130
Metribuzin	ND		1.99	1.92		ug/L		96	70 - 130
Molinate	ND		1.99	2.24		ug/L		112	70 - 130
Naphthalene	ND		1.99	2.03		ug/L		102	70 - 130
Parathion	ND		1.99	2.28		ug/L		115	70 - 130
Pendimethalin (Penoxaline)	ND		1.99	2.23		ug/L		112	70 - 130
Phenanthrene	ND		1.99	2.16		ug/L		108	70 - 130
Propachlor	ND		1.99	2.27		ug/L		114	70 - 130
Pyrene	ND		1.99	2.36		ug/L		118	70 - 130
Simazine	ND		1.99	2.24		ug/L		112	70 - 130
Terbacil	ND		1.99	1.98		ug/L		99	70 - 130
Terbutylazine	ND		1.99	2.40		ug/L		120	70 - 130
Thiobencarb	ND		1.99	2.18		ug/L		109	70 - 130
trans-Nonachlor	ND		1.99	2.57		ug/L		129	70 - 130
Trifluralin	ND		1.99	2.44		ug/L		123	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Nitro-m-xylene	96		70 - 130

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: 380-20931-1 MS
Matrix: Drinking Water
Analysis Batch: 17745

Client Sample ID: HALAWA SHAFT STATIC (VIEWING POOL)
Prep Type: Total/NA
Prep Batch: 17608

Surrogate	%Recovery	MS MS Qualifier	Limits
Triphenylphosphate	116		70 - 130
Perylene-d12	100		70 - 130

Lab Sample ID: 380-20934-J-1-A DU
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 17608

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	^3- *-	ND	*-	ug/L		NC	20
Chlorobenzilate	ND		ND		ug/L		NC	20
Chloroneb	ND		ND		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	ND		ND		ug/L		NC	20
Chlorpyrifos	ND		ND		ug/L		NC	20
Chrysene	ND		ND		ug/L		NC	20
delta-BHC	ND		ND		ug/L		NC	20
Di(2-ethylhexyl)adipate	ND		ND		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	ND		ND		ug/L		NC	20
Diazinon (Qualitative)	ND		ND		ug/L		NC	20
Dibenz(a,h)anthracene	ND		ND		ug/L		NC	20
Diclorvos (DDVP)	ND		ND		ug/L		NC	20
Dieldrin	ND		ND		ug/L		NC	20
Diethylphthalate	ND		ND		ug/L		NC	20
Dimethoate	ND		ND		ug/L		NC	20

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: 380-20934-J-1-A DU
Matrix: Water
Analysis Batch: 17745

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 17608

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
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

Surrogate	DU %Recovery	DU Qualifier	Limits
2-Nitro-m-xylene	96		70 - 130
Triphenylphosphate	107		70 - 130
Perylene-d12	104		70 - 130

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: 100090-B1
Matrix: water
Analysis Batch: O-38124

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-38124_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Acenaphthene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Anthracene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Biphenyl	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Chrysene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/20/22 00:00	09/27/22 00:03	1
Fluoranthene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Fluorene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Naphthalene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Perylene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Phenanthrene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Pyrene	ND		0.005	0.001	µg/L		09/20/22 00:00	09/27/22 00:03	1
Surrogate	Blank %Recovery	Blank Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	87		65 - 113				09/20/22 00:00	09/27/22 00:03	1
(d10-Phenanthrene)	97		80 - 111				09/20/22 00:00	09/27/22 00:03	1
(d12-Chrysene)	102		60 - 139				09/20/22 00:00	09/27/22 00:03	1
(d12-Perylene)	88		36 - 161				09/20/22 00:00	09/27/22 00:03	1
(d8-Naphthalene)	75		44 - 119				09/20/22 00:00	09/27/22 00:03	1

Lab Sample ID: 100090-BS1
Matrix: water
Analysis Batch: O-38124

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-38124_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.449		µg/L		90	49 - 117
1-Methylphenanthrene	0.5	0.522		µg/L		104	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.351		µg/L		70	57 - 120
2,6-Dimethylnaphthalene	0.5	0.39		µg/L		78	54 - 117
2-Methylnaphthalene	0.5	0.447		µg/L		89	47 - 130
Acenaphthene	0.5	0.332		µg/L		66	53 - 131
Acenaphthylene	0.5	0.33		µg/L		66	43 - 140
Anthracene	0.5	0.462		µg/L		92	58 - 135

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: 100090-BS1
Matrix: water
Analysis Batch: O-38124

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-38124_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benz[a]anthracene	0.5	0.438		µg/L		88	55 - 145
Benzo[a]pyrene	0.5	0.431		µg/L		86	51 - 143
Benzo[b]fluoranthene	0.5	0.539		µg/L		108	46 - 165
Benzo[e]pyrene	0.5	0.487		µg/L		97	42 - 152
Benzo[g,h,i]perylene	0.5	0.481		µg/L		96	63 - 133
Benzo[k]fluoranthene	0.5	0.483		µg/L		97	56 - 145
Biphenyl	0.5	0.46		µg/L		92	56 - 119
Chrysene	0.5	0.45		µg/L		90	56 - 141
Dibenz[a,h]anthracene	0.5	0.486		µg/L		97	55 - 150
Dibenzo[a,l]pyrene	0.5	0.399		µg/L		80	50 - 150
Dibenzothiophene	0.5	0.47		µg/L		94	75 - 113
Disalicylidenepropanediamine	50	36		µg/L		72	50 - 150
Fluoranthene	0.5	0.473		µg/L		95	60 - 146
Fluorene	0.5	0.371		µg/L		74	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.508		µg/L		102	50 - 151
Naphthalene	0.5	0.395		µg/L		79	41 - 126
Perylene	0.5	0.463		µg/L		93	48 - 141
Phenanthrene	0.5	0.468		µg/L		94	67 - 127
Pyrene	0.5	0.479		µg/L		96	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	71		65 - 113
(d10-Phenanthrene)	101		80 - 111
(d12-Chrysene)	103		60 - 139
(d12-Perylene)	101		36 - 161
(d8-Naphthalene)	87		44 - 119

Lab Sample ID: 100090-BS2
Matrix: water
Analysis Batch: O-38124

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-38124_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.397		µg/L		79	49 - 117	13	30
1-Methylphenanthrene	0.5	0.619		µg/L		124	66 - 127	18	30
2,3,5-Trimethylnaphthalene	0.5	0.444		µg/L		89	57 - 120	24	30
2,6-Dimethylnaphthalene	0.5	0.431		µg/L		86	54 - 117	10	30
2-Methylnaphthalene	0.5	0.399		µg/L		80	47 - 130	11	30
Acenaphthene	0.5	0.425		µg/L		85	53 - 131	25	30
Acenaphthylene	0.5	0.427		µg/L		85	43 - 140	25	30
Anthracene	0.5	0.458		µg/L		92	58 - 135	0	30
Benz[a]anthracene	0.5	0.462		µg/L		92	55 - 145	4	30
Benzo[a]pyrene	0.5	0.479		µg/L		96	51 - 143	11	30
Benzo[b]fluoranthene	0.5	0.561		µg/L		112	46 - 165	4	30
Benzo[e]pyrene	0.5	0.523		µg/L		105	42 - 152	8	30
Benzo[g,h,i]perylene	0.5	0.485		µg/L		97	63 - 133	1	30
Benzo[k]fluoranthene	0.5	0.403		µg/L		81	56 - 145	18	30
Biphenyl	0.5	0.417		µg/L		83	56 - 119	10	30
Chrysene	0.5	0.452		µg/L		90	56 - 141	0	30

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: 100090-BS2
Matrix: water
Analysis Batch: O-38124

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-38124_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Dibenz[a,h]anthracene	0.5	0.527		µg/L		105	55 - 150	8	30	
Dibenzo[a,i]pyrene	0.5	0.423		µg/L		85	50 - 150	6	30	
Dibenzothiophene	0.5	0.472		µg/L		94	75 - 113	0	30	
Disalicylidenepropanediamine	50	45.5		µg/L		91	50 - 150	23	30	
Fluoranthene	0.5	0.585		µg/L		117	60 - 146	21	30	
Fluorene	0.5	0.441		µg/L		88	58 - 131	17	30	
Indeno[1,2,3-cd]pyrene	0.5	0.564		µg/L		113	50 - 151	10	30	
Naphthalene	0.5	0.38		µg/L		76	41 - 126	4	30	
Perylene	0.5	0.495		µg/L		99	48 - 141	6	30	
Phenanthrene	0.5	0.46		µg/L		92	67 - 127	2	30	
Pyrene	0.5	0.591		µg/L		118	54 - 156	21	30	

Surrogate	LCS DUP		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	89		65 - 113
(d10-Phenanthrene)	101		80 - 111
(d12-Chrysene)	104		60 - 139
(d12-Perylene)	103		36 - 161
(d8-Naphthalene)	80		44 - 119

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

Lab Sample ID: 22DSI021WB
Matrix: WATER
Analysis Batch: 22DSI021W

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			09/21/22 20:06	1
MOTOR OIL	ND	U	0.05		mg/L			09/21/22 20:06	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
BROMOBENZENE					09/21/22 20:06	1
HEXACOSANE					09/21/22 20:06	1

Lab Sample ID: 22DSI021WL
Matrix: WATER
Analysis Batch: 22DSI021W

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	2.52		mg/L		101	50 - 130	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOBENZENE	71		60 - 130
HEXACOSANE	89		60 - 130

QC Sample Results

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

Job ID: 380-20931-1

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

Lab Sample ID: 22VGH7I04B
Matrix: WATER
Analysis Batch: 22VGH7I04

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			09/16/22 12:25	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE								09/16/22 12:25	1

Lab Sample ID: 22VGH7I04L
Matrix: WATER
Analysis Batch: 22VGH7I04

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	0.476		mg/L		95	60 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
BROMOFLUOROBENZENE	119		70 - 130				

QC Association Summary

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

Job ID: 380-20931-1

GC/MS Semi VOA

Prep Batch: 17608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-20931-1	HALAWA SHAFT STATIC (VIEWING POOL)	Total/NA	Drinking Water	525.2	
MB 380-17608/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-17608/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-17608/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-17608/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-20931-1 MS	HALAWA SHAFT STATIC (VIEWING POOL)	Total/NA	Drinking Water	525.2	
380-20934-J-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 17745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-20931-1	HALAWA SHAFT STATIC (VIEWING POOL)	Total/NA	Drinking Water	525.2	17608
MB 380-17608/1-A	Method Blank	Total/NA	Water	525.2	17608
LCS 380-17608/3-A	Lab Control Sample	Total/NA	Water	525.2	17608
LCSD 380-17608/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	17608
MRL 380-17608/2-A	Lab Control Sample	Total/NA	Water	525.2	17608
380-20931-1 MS	HALAWA SHAFT STATIC (VIEWING POOL)	Total/NA	Drinking Water	525.2	17608
380-20934-J-1-A DU	Duplicate	Total/NA	Water	525.2	17608

Subcontract

Analysis Batch: O-38124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-20931-1	HALAWA SHAFT STATIC (VIEWING POOL)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-38124_P
100090-B1	Method Blank	Total/NA	water	625 PAH Physis LL (EAL) + TICs	O-38124_P
100090-BS1	Lab Control Sample	Total/NA	water	625 PAH Physis LL (EAL) + TICs	O-38124_P
100090-BS2	Lab Control Sample Dup	Total/NA	water	625 PAH Physis LL (EAL) + TICs	O-38124_P

Analysis Batch: 22DSI021W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-20931-1	HALAWA SHAFT STATIC (VIEWING POOL)	Total/NA	Drinking Water	8015 Diesel LL (EAL) and Motor Oil	
22DSI021WB	Method Blank	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	
22DSI021WL	Lab Control Sample	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	

Analysis Batch: 22VGH7104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-20931-1	HALAWA SHAFT STATIC (VIEWING POOL)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-20931-2	TB:HALAWA SHAFT STATIC (VIEWING POOL)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
22VGH7104B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Eurofins Eaton Monrovia

QC Association Summary

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

Job ID: 380-20931-1

Subcontract (Continued)

Analysis Batch: 22VGH7104 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
22VGH7104L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-38124_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-20931-1	HALAWA SHAFT STATIC (VIEWING POOL)	Total/NA	Drinking Water	EPA_625	
100090-B1	Method Blank	Total/NA	water	EPA_625	
100090-BS1	Lab Control Sample	Total/NA	water	EPA_625	
100090-BS2	Lab Control Sample Dup	Total/NA	water	EPA_625	

Lab Chronicle

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

Job ID: 380-20931-1

Client Sample ID: HALAWA SHAFT STATIC (VIEWING POOL)

Lab Sample ID: 380-20931-1

Date Collected: 09/12/22 09:30

Matrix: Drinking Water

Date Received: 09/14/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			17608	GY8Q	EA MON	09/16/22 08:01
Total/NA	Analysis	525.2		1	17745	Q8LA	EA MON	09/19/22 15:21
Total/NA	Prep	EPA_625		1	O-38124_P			09/19/22 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-38124	YC		09/27/22 15:39
Total/NA	Analysis	8015 Diesel LL (EAL) and Motor Oil		1	22DSI021W	SDees		09/22/22 00:25
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VGH7104	SCerva		09/16/22 18:43

Client Sample ID: TB:HALAWA SHAFT STATIC (VIEWING POOL)

Lab Sample ID: 380-20931-2

Date Collected: 09/12/22 09:30

Matrix: Water

Date Received: 09/14/22 10:15

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	22VGH7104	SCerva		09/16/22 19:17

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: 380-20931-1

Laboratory: Eurofins Eaton Monrovia

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

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

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

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

Accreditation/Certification Summary

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

Job ID: 380-20931-1

Laboratory: Eurofins Eaton Monrovia (Continued)

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

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

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



Method Summary

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

Job ID: 380-20931-1

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: 380-20931-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-20931-1	HALAWA SHAFT STATIC (VIEWING POOL)	Drinking Water	09/12/22 09:30	09/14/22 10:15
380-20931-2	TB:HALAWA SHAFT STATIC (VIEWING POOL)	Water	09/12/22 09:30	09/14/22 10:15

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

Date: 10-05-2022
EMAX Batch No.: 221182

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-20931

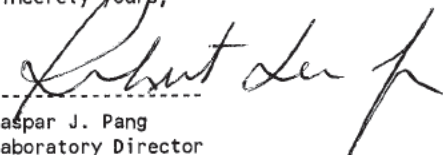
Enclosed is the Laboratory report for samples received on 09/15/22.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-20931-1	1182-01	09/12/22	WATER	TPH GASOLINE TPH DIESEL & MOTOR OIL
380-20931-2	1182-02	09/12/22	WATER	TPH GASOLINE

The results are summarized on the following pages.

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

Sincerely yours,



Caspar J. Pang
Laboratory Director

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

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

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

Chain of Custody Record



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

Client Information (Sub Contract Lab)

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

Sampler: Frank, Debbie L
Phone: Debbie.Frank@eurofins.com
E-Mail: Debbie.Frank@eurofins.com
Accreditations Required (See note): State - Hawaii

Lab P/N: Frank, Debbie L
Carrier Tracking No(s):
State of Origin: Hawaii

COO No: 380-21829-1
Page: Page 1 of 1
Job #: 380-20931-1
Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amibler
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
X - Trizma
Y - other (specify)
Z - other (specify)

Due Date Requested:	Due Date Requested (days):	Analysis Requested
9/28/2022	TAT Requested (days):	

Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Retention Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
1 HALAWA SHAFT (331-241-T P401) (380-20931-1)	9/12/22	09:30	Water		X	X	6	See Attached Instructions
2 TB:HALAWA SHAFT-331-241-T P401 (380-20931-2)	9/12/22	09:30	Water		X	X	2	See Attached Instructions

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify)
Primary Deliverable Rank: 2
Special Instructions/QC Requirements:
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

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

Empty Kit Relinquished by: _____ Date: _____ Method of Shipment: _____

Relinquished by: *GAETNER* Date/Time: *09/15/2022* Company: *EMAXX* Received by: *RAMI MI* Date/Time: *9/15/22 13:35* Company: *EMAXX*

Relinquished by: *AMT* Date/Time: *9-25-22 13:35* Company: _____ Received by: _____ Date/Time: _____ Company: _____

Custody Seal Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: *Temp. ① 4.5 ② 2.8*

REPORT ID: 221482



Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others <input type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery	Airbill / Tracking Number	ECN <u>22F182</u>
		Recipient <u>Maria Rivera</u>
		Date <u>09/15/22</u> Time <u>13:35</u>

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 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) Note:	<input type="checkbox"/> High concentrations expected	<input type="checkbox"/> From Superfund Site	<input type="checkbox"/> Rad screening required		

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 <u>4.5</u> °C	<input checked="" type="checkbox"/> Cooler 2 <u>2.8</u> °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 <u>210760237</u>	C - S/N _____
<input type="checkbox"/> Comments: <input type="checkbox"/> Temperature is out of range. PM was informed IMMEDIATELY. Note:			

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<u>2</u>	<u>7, 8</u>	<u>D22</u>	<u>2nd Date recd: 8/22/22</u>	<u>R1</u>

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. RB 9/19/22

NOTES/OBSERVATIONS:
 SAMPLE MATRIX IS DRINKING WATER? YES NO

- LEGEND:**
- | | | |
|---|---|---|
| Code Description-Sample Management | Code Description-Sample Management | Code Description-Sample Management |
| D1 Analysis is not indicated in _____ | D13 Out of Holding Time | R1 Proceed as indicated in 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 |
| D7 Date/Time mismatch COC vs label | D19 insufficient Sample | R7 Filter and preserved as necessary |
| D8 Sample listed in COC is not received | D20 No filtration info for dissolved analysis | R8 _____ |
| D9 Sample received is not listed in COC | D21 No sample for moisture determination | R9 _____ |
| D10 No initial/date on corrections in COC/label | <u>D22 2nd Date on label is incorrect</u> | R10 _____ |
| D11 Container count mismatch COC vs received | D23 _____ | R11 _____ |
| D12 Container size mismatch COC vs received | D24 _____ | R12 _____ |

REVIEWS:

Sample Labeling <u>Maria Rivera</u>	SRF <u>[Signature]</u>	PM <u>[Signature]</u>
Date <u>09/15/22</u>	Date <u>9/15/22</u>	Date <u>9/19/22</u>

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

380-20931

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

SDG#: 22I182



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-20931

SDG : 22I182

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

A total of two(2) water samples were received on 09/15/22 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.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VGH7I04B - 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. VGH7I04L/VGH7I04C 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 I184-01M/I184-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

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SAMPLE RESULTS

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/12/22 09:30
Project     : 380-20931                   Date Received: 09/15/22
Batch No.   : 221182                       Date Extracted: 09/16/22 18:43
Sample ID   : 380-20931-1                 Date Analyzed: 09/16/22 18:43
Lab Samp ID : I182-01                     Dilution Factor: 1
Lab File ID : A116016A                     Matrix: WATER
Ext Btch ID : 22VGH7104                   % Moisture: NA
Calib. Ref.: A116015A                     Instrument ID: H7
=====

```

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	0.0376	0.0400	94	60-140

Notes:

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

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

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QC SUMMARIES

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/16/22 12:25
Project     : 380-20931                   Date Received: 09/16/22
Batch No.   : 221182                       Date Extracted: 09/16/22 12:25
Sample ID   : MBLK1W                       Date Analyzed: 09/16/22 12:25
Lab Samp ID: VGH7104B                     Dilution Factor: 1
Lab File ID: AI16005A                      Matrix: WATER
Ext Btch ID: 22VGH7104                    % Moisture: NA
Calib. Ref.: AI16003A                     Instrument ID: H7
=====

```

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 : SCerva Analyzed by : SCerva

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-20931
BATCH NO. : 221182
METHOD : 5030B/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID : VGH7104B	VGH7104L	VGH7104C
LAB FILE ID : A116005A	A116006A	A116007A
DATE PREPARED : 09/16/22 12:25	09/16/22 12:59	09/16/22 13:34
DATE ANALYZED : 09/16/22 12:25	09/16/22 12:59	09/16/22 13:34
PREP BATCH : 22VGH7104	22VGH7104	22VGH7104
CALIBRATION REF: A116003A	A116003A	A116003A

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	0.476	95	0.500	0.496	99	4	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0475	119	0.0400	0.0468	117	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 : 380-20912
BATCH NO. : 221184
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-20912-1	380-20912-1MS	380-20912-1MSD
LAB SAMPLE ID	: I184-01	I184-01M	I184-01S
LAB FILE ID	: A116020A	A116021A	A116022A
DATE PREPARED	: 09/16/22 21:01	09/16/22 21:35	09/16/22 22:09
DATE ANALYZED	: 09/16/22 21:01	09/16/22 21:35	09/16/22 22:09
PREP BATCH	: 22VGH7104	22VGH7104	22VGH7104
CALIBRATION REF:	A116015A	A116015A	A116015A

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	0.434	87	0.500	0.455	91	5	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0419	105	0.0400	0.0433	108	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-20931

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 221182



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-20931

SDG : 22I182

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 09/15/22 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.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSI021WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Diesel was within LCS QC limits in DSI021WL. 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 22I184-01M/22I184-01S. 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.

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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/12/22 09:30
Project     : 380-20931                 Date Received: 09/15/22
Batch No.   : 221182                   Date Extracted: 09/20/22 13:00
Sample ID   : 380-20931-1              Date Analyzed: 09/22/22 00:25
Lab Samp ID: 221182-01                 Dilution Factor: 1
Lab File ID: LI20122A                  Matrix: WATER
Ext Btch ID: 22DSI021W                 % Moisture: NA
Calib. Ref.: LI20115A                  Instrument ID: D5
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.025	0.013	
Motor Oil	ND	0.051	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.331	0.505	66	60-130
Hexacosane	0.0950	0.126	75	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 : 990ml Final Volume : 5ml
Prepared by : DLi Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

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=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/20/22 13:00
Project    : 380-20931                   Date Received: 09/20/22
Batch No.  : 221182                       Date Extracted: 09/20/22 13:00
Sample ID  : MBLK1W                       Date Analyzed: 09/21/22 20:06
Lab Samp ID: DSI021WB                     Dilution Factor: 1
Lab File ID: LI20108A                     Matrix: WATER
Ext Btch ID: 22DSI021W                   % Moisture: NA
Calib. Ref.: LI20094A                   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	0.358	0.500	72	60-130
Hexacosane	0.0961	0.125	77	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 : DLi Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-20931
BATCH NO. : 221182
METHOD : 3520C/8015B

=====

MATRIX	: WATER	% MOISTURE:NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: DSI021WB	DSI021WL
LAB FILE ID	: LI20108A	LI20109A
DATE PREPARED	: 09/20/22 13:00	09/20/22 13:00
DATE ANALYZED	: 09/21/22 20:06	09/21/22 20:25
PREP BATCH	: 22DSI021W	22DSI021W
CALIBRATION REF:	LI20094A	LI20094A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Diesel	ND	2.50	2.52	101	50-130

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.356	71	60-130
Hexacosane	0.125	0.111	89	60-130

=====

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-20912
BATCH NO. : 221184
METHOD : 3520C/8015B

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=====
MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : 380-20912-1 380-20912-1MS 380-20912-1MSD
LAB SAMPLE ID : 221184-01 221184-01M 221184-01S
LAB FILE ID : LI20124A LI20126A LI20127A
DATE PREPARED : 09/20/22 13:00 09/20/22 13:00 09/20/22 13:00
DATE ANALYZED : 09/22/22 01:01 09/22/22 01:38 09/22/22 01:56
PREP BATCH : 22DSI021W 22DSI021W 22DSI021W
CALIBRATION REF: LI20115A LI20115A LI20115A
=====
  
```

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.58	2.60	101	2.45	2.61	107	0	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.515	0.387	75	0.490	0.315	64	60-130
Hexacosane	0.129	0.132	103	0.123	0.129	105	60-130

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

September 30, 2022

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

Project Name: RED-HILL Project # 38001111 Job # 380-20931-1
Physis Project ID: 1407003-297

Dear Debbie,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 9/15/2022. 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: 1407003-297

RED-HILL Project # 38001111 Job # 380-20931-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
100091	HALAWA SHAFT	331-241-TP401 (380-20931-1)	9/12/2022	9:30	Samplewater	Not Specified

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ABBREVIATIONS and ACRONYMS

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



QUALITY ASSURANCE SUMMARY

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

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

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

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS₁/MS₂, BS₁/BS₂, LCS₁/LCS₂, LCM₁/LCM₂, CRM₁/CRM₂, surrogate spikes and/or replicate project sample analysis (R₁/R₂) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

BLANK SPIKES: BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

MATRIX SPIKES: MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

CERTIFIED REFERENCE MATERIALS: CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

LABORATORY CONTROL MATERIAL: LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

LABORATORY CONTROL SPIKES: LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

SURROGATES: A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to

the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

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

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

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

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PHYSIS QUALIFIER CODES

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

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

BIANALYTICALS

REPORT

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 100091-R1	HALAWA SHAFT	331-241-TP401 (38	Matrix: Samplewater				Sampled:	12-Sep-22	9:30	Received:	15-Sep-22
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-38124	19-Sep-22	27-Sep-22



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 100091-R1	HALAWA SHAFT 331-241-TP401 (38 Matrix: Samplewater)						Sampled:	12-Sep-22	9:30	Received:	15-Sep-22
(d10-Acenaphthene)	EPA 625.1	% Recovery	86	1			Total		O-38124	19-Sep-22	27-Sep-22
(d10-Phenanthrene)	EPA 625.1	% Recovery	96	1			Total		O-38124	19-Sep-22	27-Sep-22
(d12-Chrysene)	EPA 625.1	% Recovery	105	1			Total		O-38124	19-Sep-22	27-Sep-22
(d12-Perylene)	EPA 625.1	% Recovery	92	1			Total		O-38124	19-Sep-22	27-Sep-22
(d8-Naphthalene)	EPA 625.1	% Recovery	80	1			Total		O-38124	19-Sep-22	27-Sep-22
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-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-38124	19-Sep-22	27-Sep-22
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38124	19-Sep-22	27-Sep-22

QUALITY CONTROL REPORT

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Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Sample ID: 100090-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-38124			Prepared: 20-Sep-22		Analyzed: 27-Sep-22			
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L							
Sample ID: 100090-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-38124			Prepared: 20-Sep-22		Analyzed: 27-Sep-22			
Disalicylidenepropanediamin	Total	36	1	0.05	0.1	µg/L	50	0	72	50 - 150%	PASS		
Sample ID: 100090-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-38124			Prepared: 20-Sep-22		Analyzed: 27-Sep-22			
Disalicylidenepropanediamin	Total	45.5	1	0.05	0.1	µg/L	50	0	91	50 - 150%	PASS	23	30 PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc	
							LEVEL	RESULT	% LIMITS	% LIMITS		
Sample ID: 100090-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
		Method: EPA 625.1			Batch ID: O-38124			Prepared: 20-Sep-22		Analyzed: 27-Sep-22		
(d10-Acenaphthene)	Total	87	1				% Recovery	100	87	65 - 113%	PASS	
(d10-Phenanthrene)	Total	97	1				% Recovery	100	97	80 - 111%	PASS	
(d12-Chrysene)	Total	102	1				% Recovery	100	102	60 - 139%	PASS	
(d12-Perylene)	Total	88	1				% Recovery	100	88	36 - 161%	PASS	
(d8-Naphthalene)	Total	75	1				% Recovery	100	75	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						
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L						

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

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



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 100090-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-38124			Prepared: 20-Sep-22		Analyzed: 27-Sep-22					
(d10-Acenaphthene)	Total	71	1			% Recovery	100	0	71	65 - 113%	PASS	
(d10-Phenanthrene)	Total	101	1			% Recovery	100	0	101	80 - 111%	PASS	
(d12-Chrysene)	Total	103	1			% Recovery	100	0	103	60 - 139%	PASS	
(d12-Perylene)	Total	101	1			% Recovery	100	0	101	36 - 161%	PASS	
(d8-Naphthalene)	Total	87	1			% Recovery	100	0	87	44 - 119%	PASS	
1-Methylnaphthalene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	49 - 117%	PASS	
1-Methylphenanthrene	Total	0.522	1	0.001	0.005	µg/L	0.5	0	104	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.351	1	0.001	0.005	µg/L	0.5	0	70	57 - 120%	PASS	
2,6-Dimethylnaphthalene	Total	0.39	1	0.001	0.005	µg/L	0.5	0	78	54 - 117%	PASS	
2-Methylnaphthalene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	47 - 130%	PASS	
Acenaphthene	Total	0.332	1	0.001	0.005	µg/L	0.5	0	66	53 - 131%	PASS	
Acenaphthylene	Total	0.33	1	0.001	0.005	µg/L	0.5	0	66	43 - 140%	PASS	
Anthracene	Total	0.462	1	0.001	0.005	µg/L	0.5	0	92	58 - 135%	PASS	
Benz[a]anthracene	Total	0.438	1	0.001	0.005	µg/L	0.5	0	88	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.431	1	0.001	0.005	µg/L	0.5	0	86	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.539	1	0.001	0.005	µg/L	0.5	0	108	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	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	0.46	1	0.001	0.005	µg/L	0.5	0	92	56 - 119%	PASS	
Chrysene	Total	0.45	1	0.001	0.005	µg/L	0.5	0	90	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.486	1	0.001	0.005	µg/L	0.5	0	97	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.399	1	0.001	0.005	µg/L	0.5	0	80	50 - 150%	PASS	
Dibenzothiophene	Total	0.47	1	0.001	0.005	µg/L	0.5	0	94	75 - 113%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	0.473	1	0.001	0.005	µg/L	0.5	0	95	60 - 146%	PASS		
Fluorene	Total	0.371	1	0.001	0.005	µg/L	0.5	0	74	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.508	1	0.001	0.005	µg/L	0.5	0	102	50 - 151%	PASS		
Naphthalene	Total	0.395	1	0.001	0.005	µg/L	0.5	0	79	41 - 126%	PASS		
Perylene	Total	0.463	1	0.001	0.005	µg/L	0.5	0	93	48 - 141%	PASS		
Phenanthrene	Total	0.468	1	0.001	0.005	µg/L	0.5	0	94	67 - 127%	PASS		
Pyrene	Total	0.479	1	0.001	0.005	µg/L	0.5	0	96	54 - 156%	PASS		

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc		
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 100090-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:				
		Method: EPA 625.1			Batch ID: O-38124			Prepared: 20-Sep-22			Analyzed: 27-Sep-22				
(d10-Acenaphthene)	Total	89	1				% Recovery	100	0	89	65 - 113%	PASS	22	30	PASS
(d10-Phenanthrene)	Total	101	1				% Recovery	100	0	101	80 - 111%	PASS	0	30	PASS
(d12-Chrysene)	Total	104	1				% Recovery	100	0	104	60 - 139%	PASS	1	30	PASS
(d12-Perylene)	Total	103	1				% Recovery	100	0	103	36 - 161%	PASS	2	30	PASS
(d8-Naphthalene)	Total	80	1				% Recovery	100	0	80	44 - 119%	PASS	8	30	PASS
1-Methylnaphthalene	Total	0.397	1	0.001	0.005	µg/L		0.5	0	79	49 - 117%	PASS	13	30	PASS
1-Methylphenanthrene	Total	0.619	1	0.001	0.005	µg/L		0.5	0	124	66 - 127%	PASS	18	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.444	1	0.001	0.005	µg/L		0.5	0	89	57 - 120%	PASS	24	30	PASS
2,6-Dimethylnaphthalene	Total	0.431	1	0.001	0.005	µg/L		0.5	0	86	54 - 117%	PASS	10	30	PASS
2-Methylnaphthalene	Total	0.399	1	0.001	0.005	µg/L		0.5	0	80	47 - 130%	PASS	11	30	PASS
Acenaphthene	Total	0.425	1	0.001	0.005	µg/L		0.5	0	85	53 - 131%	PASS	25	30	PASS
Acenaphthylene	Total	0.427	1	0.001	0.005	µg/L		0.5	0	85	43 - 140%	PASS	25	30	PASS
Anthracene	Total	0.458	1	0.001	0.005	µg/L		0.5	0	92	58 - 135%	PASS	0	30	PASS
Benz[a]anthracene	Total	0.462	1	0.001	0.005	µg/L		0.5	0	92	55 - 145%	PASS	4	30	PASS
Benzo[a]pyrene	Total	0.479	1	0.001	0.005	µg/L		0.5	0	96	51 - 143%	PASS	11	30	PASS
Benzo[b]fluoranthene	Total	0.561	1	0.001	0.005	µg/L		0.5	0	112	46 - 165%	PASS	4	30	PASS
Benzo[e]pyrene	Total	0.523	1	0.001	0.005	µg/L		0.5	0	105	42 - 152%	PASS	8	30	PASS
Benzo[g,h,i]perylene	Total	0.485	1	0.001	0.005	µg/L		0.5	0	97	63 - 133%	PASS	1	30	PASS
Benzo[k]fluoranthene	Total	0.403	1	0.001	0.005	µg/L		0.5	0	81	56 - 145%	PASS	18	30	PASS
Biphenyl	Total	0.417	1	0.001	0.005	µg/L		0.5	0	83	56 - 119%	PASS	10	30	PASS
Chrysene	Total	0.452	1	0.001	0.005	µg/L		0.5	0	90	56 - 141%	PASS	0	30	PASS
Dibenz[a,h]anthracene	Total	0.527	1	0.001	0.005	µg/L		0.5	0	105	55 - 150%	PASS	8	30	PASS
Dibenzo[a,l]pyrene	Total	0.423	1	0.001	0.005	µg/L		0.5	0	85	50 - 150%	PASS	6	30	PASS
Dibenzothiophene	Total	0.472	1	0.001	0.005	µg/L		0.5	0	94	75 - 113%	PASS	0	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Fluoranthene	Total	0.585	1	0.001	0.005	µg/L	0.5	0	117	60 - 146%	PASS	21	30	PASS
Fluorene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	58 - 131%	PASS	17	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.564	1	0.001	0.005	µg/L	0.5	0	113	50 - 151%	PASS	10	30	PASS
Naphthalene	Total	0.38	1	0.001	0.005	µg/L	0.5	0	76	41 - 126%	PASS	4	30	PASS
Perylene	Total	0.495	1	0.001	0.005	µg/L	0.5	0	99	48 - 141%	PASS	6	30	PASS
Phenanthrene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	67 - 127%	PASS	2	30	PASS
Pyrene	Total	0.591	1	0.001	0.005	µg/L	0.5	0	118	54 - 156%	PASS	21	30	PASS

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- 2
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- 11
- 12
- 13
- 14
- 15
- 16

PHYSIS

TENTATIVELY

IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 100091

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.4442	7.7697		Anthracene-D10-	1719-06-8	97
			No TICs were detected in this sample.		

Concentration estimated using the response for Anthracene-d10

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

Sample ID: Lab Blank Batch O-38124

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
33.4477	0.2438	1111	Anthracene-D10	1517-22-2	89
			No TICs were detected in this sample.		

Concentration estimated using the response for Anthracene-d10

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

PERFORMANCE CHAIN OF CUSTODY

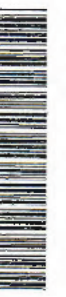
TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

1
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16

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

Chain of Custody Record



Client Information (Sub Contract Lab)

Client Contact: _____
 Shipping/Receiving: _____
 Company: **Physis Environmental Laboratories**
 Address: **1904 Wright Circle,**
 City: **Anaheim**
 State, Zip: **CA, 92806**
 Phone: _____
 Email: _____
 Project Name: **RED-HILL**
 Site: **Honolulu BWS Sites**

Sampler: _____
 Lab PM: **Frank, Debbie L**
 E-Mail: **Debbie.Frank@ei.eurofins.com**
 Accreditations Required (See note): **State - Hawaii**

Carrier Tracking No(s): _____
 State of Origin: **Hawaii**

COC No: **380-21830-1**
 Page: **Page 1 of 1**
 Job #: **380-20931-1**

Due Date Requested: **9/28/2022**
 TAT Requested (days): _____

Analysis Requested

Field Filtered Sample (Yes or No) **Yes**
 Perform MS/MSD (Yes or No) **Yes**
 SUB (626 PAH Physis LL (EAL) + TICs)/ 626 PAH Physis LL (EAL) + TICs

PO #: _____
 WO #: _____
 Project #: **38001111**
 SSSOW#: _____

Matrix: **MATRIX**

Sample Type (C=comp, G=grab) _____
 (W=water, S=solid, O=organic, B=BTX, A=All)

Matrix Code: **Water**

Field Filtered Sample (Yes or No) **Yes**
 Perform MS/MSD (Yes or No) **Yes**
 SUB (626 PAH Physis LL (EAL) + TICs)/ 626 PAH Physis LL (EAL) + TICs

Carrier Tracking No(s): _____
 State of Origin: **Hawaii**

COC No: **380-21830-1**
 Page: **Page 1 of 1**
 Job #: **380-20931-1**

Preservation Codes:
 A - HCL
 B - NaOH
 C - Zn Acetate
 D - Nitric Acid
 E - NaHSO4
 F - MeOH
 G - Ammonia
 H - Ascorbic Acid
 I - Ice
 J - DI Water
 K - EDTA
 L - EDA
 M - Hexane
 N - None
 O - AsNaO2
 P - Na2O4S
 Q - Na2SO3
 R - Na2S2O3
 S - H2SO4
 T - TSP Dodecahydrate
 U - Acetone
 V - MCAA
 W - pH 4.5
 Y - Trizma
 Z - other (specify) _____

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Total Number of Containers	Special Instructions/Note:
HALAWA SHAFT (331-241-T-P401) (380-20931-1)	9/12/22	09:30	Hawaiian	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SUB (626 PAH Physis LL (EAL) + TICs)/ 626 PAH Physis LL (EAL) + TICs	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyze & 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/assessments being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification
 Unconfirmed _____
 Deliverable Requested: I, II, III, IV, Other (specify) _____
 Primary Deliverable Rank: **2**

Special Instructions/ICC Requirements: _____

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

Empty Kit Relinquished by: _____ Date: _____

Relinquished by: **GA RITNER** Date/Time: **09/15/2022** Company: **EGA**

Relinquished by: **AR - T** Date/Time: **9-22-22 1:31** Company: _____

Relinquished by: **YONG** Date/Time: **9/19/22 1753** Company: **PHYSIS**

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

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

Project Iteration ID: 1407003-297
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111
 Job # 380-20931-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: yl
2. Date Received: 9/15/22
3. Time Received: 1253
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)
 - 2 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): 2.8 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: RGH

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:



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 = 401 (Observation = 4.5 °C) (Corr. Factor 0.1 °C) (Final = 4.4 °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 quadrant

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 VOA and Radon Internal COFC for additional bottles)

Example from headspace concerns: Methods 816.4, HAA(8261,862), 506, 8PME, @CH, 832LCMS, 868, 838, Anatoxin, LCMS methods using 40 ml vials, International clients:

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

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

RECEIVED BY	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
		Chris Broach	Euroline Eaton Analytical	9-14-22	1015
SAMPLES CHECKED AGAINST COPY BY	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
		Heidi Castro	Euroline Eaton Analytical	9-14-22	1635



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: 13SEP22
ACTWGT: 52.00 LB
CAD: 100205419/INET4530

BILL RECEIPT

581J1IEC80FE2D

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

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

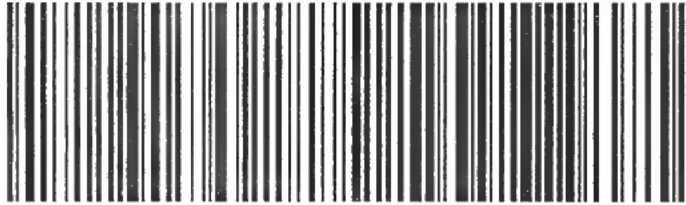


1 of 2
WED - 14 SEP 10:30A
PRIORITY OVERNIGHT

TRK# 7779 2490 2363
0201
MASTER

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. 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 Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-20931-1

Login Number: 20931
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	

