

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 308
Honolulu, Hawaii 96843

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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-33504-1

Eurofins Drinking Water Testing Pomona

Job Notes

Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.

Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

Test results relate only to the sample(s) tested.

Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

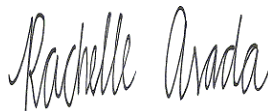
This report shall not be reproduced except in full, without the written approval of the laboratory.

This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

Compliance Statement

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

Authorization



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Authorized for release by
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Definitions/Glossary

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

Job ID: 380-33504-1

Qualifiers

GC/MS Semi VOA

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

GC/MS Semi VOA TICs

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

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 380-33504-1

Job ID: 380-33504-1

Laboratory: Eurofins Drinking Water Testing Pomona

Narrative

Job Narrative 380-33504-1

Comments

No additional comments.

Receipt

The samples were received on 1/6/2023 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.5° C.

GC/MS Semi VOA

Method 525.2: The laboratory control sample duplicate (LCSD) for preparation batch 380-29128 and analytical batch 380-29188 recovered outside above control limits for the following analyte: Diclorvos (DDVP). This analyte was biased high in the LCSD a was not detected in the associated samples; therefore, the data have been reported.

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

Subcontract non-Sister

See attached subcontract report.

Organic Prep

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

Subcontract Work

Methods 8015 Gas (Purgeable) LL (EAL), 8015 LL DRO/MRO/JP5/JP8: These methods were subcontracted to EMAX Laboratories Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method 625 PAH Physis LL (EAL) + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

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

Job ID: 380-33504-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-1

No Detections.

Client Sample ID: TB: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-2

No Detections.

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This Detection Summary does not include radiochemical test results.

Client Sample Results

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

Job ID: 380-33504-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-1

Date Collected: 01/05/23 10:00

Matrix: Drinking Water

Date Received: 01/06/23 09:50

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
2,4'-DDE	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
2,4'-DDT	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
2,4-Dinitrotoluene	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
2,6-Dinitrotoluene	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
4,4'-DDD	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
4,4'-DDE	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
4,4'-DDT	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Acenaphthene	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Acenaphthylene	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Acetochlor	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Alachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
alpha-BHC	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
alpha-Chlordane	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Anthracene	ND		0.019	ug/L		01/07/23 12:59	01/09/23 17:26	1
Atrazine	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Benz(a)anthracene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Benzo[a]pyrene	ND		0.019	ug/L		01/07/23 12:59	01/09/23 17:26	1
Benzo[b]fluoranthene	ND		0.019	ug/L		01/07/23 12:59	01/09/23 17:26	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Benzo[k]fluoranthene	ND		0.019	ug/L		01/07/23 12:59	01/09/23 17:26	1
beta-BHC	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Bromacil	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Butachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Butylbenzylphthalate	ND		0.49	ug/L		01/07/23 12:59	01/09/23 17:26	1
Caffeine	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Chlorobenzilate	ND	*1	0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Chloroneb	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Chlorothalonil (Draconil, Bravo)	ND	^3+	0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Chlorpyrifos	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Chrysene	ND		0.019	ug/L		01/07/23 12:59	01/09/23 17:26	1
delta-BHC	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Di(2-ethylhexyl)adipate	ND		0.58	ug/L		01/07/23 12:59	01/09/23 17:26	1
Bis(2-ethylhexyl) phthalate	ND		0.58	ug/L		01/07/23 12:59	01/09/23 17:26	1
Diazinon (Qualitative)	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Diclorvos (DDVP)	ND	*+	0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Dieldrin	ND		0.19	ug/L		01/07/23 12:59	01/09/23 17:26	1
Diethylphthalate	ND		0.49	ug/L		01/07/23 12:59	01/09/23 17:26	1
Dimethoate	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Dimethylphthalate	ND		0.49	ug/L		01/07/23 12:59	01/09/23 17:26	1
Di-n-butyl phthalate	ND		0.97	ug/L		01/07/23 12:59	01/09/23 17:26	1
Di-n-octyl phthalate	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Endosulfan I (Alpha)	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Endosulfan II (Beta)	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Endosulfan sulfate	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Endrin	ND	^3+	0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Endrin aldehyde	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
EPTC	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1

Client Sample Results

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

Job ID: 380-33504-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-1

Date Collected: 01/05/23 10:00

Matrix: Drinking Water

Date Received: 01/06/23 09:50

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Fluorene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
gamma-Chlordane	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Heptachlor	ND		0.039	ug/L		01/07/23 12:59	01/09/23 17:26	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Hexachlorobenzene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Isophorone	ND		0.49	ug/L		01/07/23 12:59	01/09/23 17:26	1
Lindane	ND		0.039	ug/L		01/07/23 12:59	01/09/23 17:26	1
Malathion	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Methoxychlor	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Metolachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Metribuzin	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Molinate	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Naphthalene	ND		0.29	ug/L		01/07/23 12:59	01/09/23 17:26	1
Parathion	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Pendimethalin (Penoxaline)	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Total Permethrin (mixed isomers)	ND		0.19	ug/L		01/07/23 12:59	01/09/23 17:26	1
Phenanthrene	ND		0.039	ug/L		01/07/23 12:59	01/09/23 17:26	1
Propachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Pyrene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Simazine	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Terbacil	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Terbutylazine	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1
Thiobencarb	ND		0.19	ug/L		01/07/23 12:59	01/09/23 17:26	1
trans-Nonachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 17:26	1
Trifluralin	ND		0.097	ug/L		01/07/23 12:59	01/09/23 17:26	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	01/07/23 12:59	01/09/23 17:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	104		70 - 130	01/07/23 12:59	01/09/23 17:26	1
Triphenylphosphate	105		70 - 130	01/07/23 12:59	01/09/23 17:26	1
Perylene-d12	97		70 - 130	01/07/23 12:59	01/09/23 17:26	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		01/09/23 00:00	01/26/23 02:24	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Acenaphthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Acenaphthylene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Anthracene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1

Client Sample Results

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

Job ID: 380-33504-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-1

Date Collected: 01/05/23 10:00

Matrix: Drinking Water

Date Received: 01/06/23 09:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[e]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Biphenyl	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Chrysene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Dibenzo[a,i]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Dibenzothiophene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		01/09/23 00:00	01/26/23 02:24	1
Fluoranthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Fluorene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Naphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Perylene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Phenanthrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1
Pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/26/23 02:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	124		27 - 133	01/09/23 00:00	01/26/23 02:24	1
(d10-Phenanthrene)	128		43 - 129	01/09/23 00:00	01/26/23 02:24	1
(d12-Chrysene)	108		52 - 144	01/09/23 00:00	01/26/23 02:24	1
(d12-Perylene)	104		36 - 161	01/09/23 00:00	01/26/23 02:24	1
(d8-Naphthalene)	121		25 - 125	01/09/23 00:00	01/26/23 02:24	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			01/10/23 00:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	84		60 - 140		01/10/23 00:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.028		mg/L			01/12/23 16:54	1
JP5	ND	U	0.056		mg/L			01/12/23 16:54	1
JP8	ND	U	0.056		mg/L			01/12/23 16:54	1
MOTOR OIL	ND	U	0.056		mg/L			01/12/23 16:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	93		60 - 130		01/12/23 16:54	1
HEXACOSANE	82		60 - 130		01/12/23 16:54	1

Client Sample ID: TB: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-2

Date Collected: 01/05/23 10:00

Matrix: Water

Date Received: 01/06/23 09:50

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			01/10/23 01:09	1

Client Sample Results

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

Job ID: 380-33504-1

Client Sample ID: TB: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-2

Date Collected: 01/05/23 10:00

Matrix: Water

Date Received: 01/06/23 09:50

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
BROMOFLUOROBENZENE	81		60 - 140		01/10/23 01:09	1

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Action Limit Summary

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

Job ID: 380-33504-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-1

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	0.019	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400	0.58	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.58	525.2	Total/NA
Endrin	ND	^3+	ug/L	2	0.097	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	0.097	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: 380-33504-1

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)
380-33504-1	HALAWA WELLS UNITS 1 & 2	104	105	97

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)
380-33484-F-1-A MS	Matrix Spike	107	107	100
380-33493-F-1-A DU	Duplicate	104	98	100
LCS 380-29128/3-A	Lab Control Sample	103	98	94
LCS 380-29128/4-A	Lab Control Sample Dup	103	101	98
MB 380-29128/1-A	Method Blank	107	96	89
MRL 380-29128/2-A	Lab Control Sample	105	97	91

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

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

Matrix: BlankMatrix

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
103180-B1	Method Blank	64	67	54	61	51
103180-BS1	Lab Control Sample	62	63	54	58	52
103180-BS2	Lab Control Sample Dup	59	62	52	54	50

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

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-33504-1	HALAWA WELLS UNITS 1 & 2	124	128	108	121	104

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

Surrogate Summary

Client: City & County of Honolulu

Job ID: 380-33504-1

Project/Site: RED-HILL

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-33504-1	HALAWA WELLS UNITS 1 & 2	84

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)
23VG39A03C	LCD	109
23VG39A03L	Lab Control Sample	97

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)
380-33504-2	TB: HALAWA WELLS UNITS 1 & 2	81

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
23VG39A03B	Method Blank	

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	HEXACOSANE (60-130)
380-33504-1	HALAWA WELLS UNITS 1 & 2	93	82

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Surrogate Summary

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

Job ID: 380-33504-1

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

Matrix: WATER

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BB	XACOSAI
23DSA012WB	Method Blank		
Surrogate Legend			
BB = BROMOBENZENE			
HEXACOSANE = HEXACOSANE			

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

Matrix: WATER

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
23DSA012WC	LCD	106	92
23DSA012WL	Lab Control Sample	102	96
23J5A012WC	LCD	97	82
23J5A012WL	Lab Control Sample	95	81
23J8A012WC	LCD	98	74
23J8A012WL	Lab Control Sample	99	77
Surrogate Legend			
BB = BROMOBENZENE			
HEXACOSANE = HEXACOSANE			

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: MB 380-29128/1-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29128

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
2,4'-DDE	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
2,4'-DDT	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
2,4-Dinitrotoluene	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
2,6-Dinitrotoluene	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
4,4'-DDD	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
4,4'-DDE	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
4,4'-DDT	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Acenaphthene	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Acenaphthylene	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Acetochlor	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Alachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
alpha-BHC	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
alpha-Chlordane	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Anthracene	ND		0.020	ug/L		01/07/23 12:59	01/09/23 13:45	1
Atrazine	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Benz(a)anthracene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Benzo[a]pyrene	ND		0.020	ug/L		01/07/23 12:59	01/09/23 13:45	1
Benzo[b]fluoranthene	ND		0.020	ug/L		01/07/23 12:59	01/09/23 13:45	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Benzo[k]fluoranthene	ND		0.020	ug/L		01/07/23 12:59	01/09/23 13:45	1
beta-BHC	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Bromacil	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Butachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Butylbenzylphthalate	ND		0.49	ug/L		01/07/23 12:59	01/09/23 13:45	1
Caffeine	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Chlorobenzilate	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Chloroneb	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Chlorpyrifos	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Chrysene	ND		0.020	ug/L		01/07/23 12:59	01/09/23 13:45	1
delta-BHC	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		01/07/23 12:59	01/09/23 13:45	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		01/07/23 12:59	01/09/23 13:45	1
Diazinon (Qualitative)	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Diclorvos (DDVP)	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Dieldrin	ND		0.20	ug/L		01/07/23 12:59	01/09/23 13:45	1
Diethylphthalate	ND		0.49	ug/L		01/07/23 12:59	01/09/23 13:45	1
Dimethoate	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Dimethylphthalate	ND		0.49	ug/L		01/07/23 12:59	01/09/23 13:45	1
Di-n-butyl phthalate	ND		0.99	ug/L		01/07/23 12:59	01/09/23 13:45	1
Di-n-octyl phthalate	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Endosulfan I (Alpha)	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Endosulfan II (Beta)	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Endosulfan sulfate	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Endrin	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Endrin aldehyde	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: MB 380-29128/1-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29128

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Fluoranthene	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Fluorene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
gamma-Chlordane	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Heptachlor	ND		0.039	ug/L		01/07/23 12:59	01/09/23 13:45	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Hexachlorobenzene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Isophorone	ND		0.49	ug/L		01/07/23 12:59	01/09/23 13:45	1
Lindane	ND		0.039	ug/L		01/07/23 12:59	01/09/23 13:45	1
Malathion	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Methoxychlor	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Metolachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Metribuzin	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Molinate	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Naphthalene	ND		0.30	ug/L		01/07/23 12:59	01/09/23 13:45	1
Parathion	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		01/07/23 12:59	01/09/23 13:45	1
Phenanthrene	ND		0.039	ug/L		01/07/23 12:59	01/09/23 13:45	1
Propachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Pyrene	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Simazine	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Terbacil	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Terbutylazine	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1
Thiobencarb	ND		0.20	ug/L		01/07/23 12:59	01/09/23 13:45	1
trans-Nonachlor	ND		0.049	ug/L		01/07/23 12:59	01/09/23 13:45	1
Trifluralin	ND		0.099	ug/L		01/07/23 12:59	01/09/23 13:45	1

<i>Tentatively Identified Compound</i>	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	1.78	T J	ug/L		5.73	N/A	01/07/23 12:59	01/09/23 13:45	1
Unknown	0.710	T J	ug/L		6.40	N/A	01/07/23 12:59	01/09/23 13:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	107		70 - 130	01/07/23 12:59	01/09/23 13:45	1
Triphenylphosphate	96		70 - 130	01/07/23 12:59	01/09/23 13:45	1
Perylene-d12	89		70 - 130	01/07/23 12:59	01/09/23 13:45	1

Lab Sample ID: LCS 380-29128/3-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.97	1.97		ug/L		100	70 - 130
2,4'-DDE	1.97	1.99		ug/L		101	70 - 130
2,4'-DDT	1.97	2.16		ug/L		110	70 - 130
2,4-Dinitrotoluene	1.97	1.86		ug/L		94	70 - 130

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: LCS 380-29128/3-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	1.97	2.01		ug/L		102	70 - 130
4,4'-DDD	1.97	2.21		ug/L		112	70 - 130
4,4'-DDE	1.97	2.07		ug/L		105	70 - 130
4,4'-DDT	1.97	2.22		ug/L		113	70 - 130
Acenaphthene	1.97	2.08		ug/L		105	70 - 130
Acenaphthylene	1.97	2.00		ug/L		102	70 - 130
Acetochlor	1.97	2.25		ug/L		114	70 - 130
Alachlor	1.97	2.17		ug/L		110	70 - 130
alpha-BHC	1.97	2.10		ug/L		107	70 - 130
alpha-Chlordane	1.97	1.89		ug/L		96	70 - 130
Anthracene	1.97	2.15		ug/L		109	70 - 130
Atrazine	1.97	1.94		ug/L		99	70 - 130
Benz(a)anthracene	1.97	2.18		ug/L		111	70 - 130
Benzo[a]pyrene	1.97	2.11		ug/L		107	70 - 130
Benzo[b]fluoranthene	1.97	2.22		ug/L		113	70 - 130
Benzo[g,h,i]perylene	1.97	2.16		ug/L		110	70 - 130
Benzo[k]fluoranthene	1.97	2.27		ug/L		115	70 - 130
beta-BHC	1.97	2.15		ug/L		109	70 - 130
Bromacil	1.97	2.36		ug/L		120	70 - 130
Butachlor	1.97	2.25		ug/L		114	70 - 130
Butylbenzylphthalate	1.97	2.35		ug/L		119	70 - 130
Caffeine	1.97	1.44		ug/L		73	45 - 137
Chlorobenzilate	1.97	1.68		ug/L		85	70 - 130
Chloroneb	1.97	2.13		ug/L		108	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	1.93		ug/L		98	70 - 130
Chlorpyrifos	1.97	2.12		ug/L		108	70 - 130
Chrysene	1.97	2.11		ug/L		107	70 - 130
delta-BHC	1.97	2.17		ug/L		110	70 - 130
Di(2-ethylhexyl)adipate	1.97	2.44		ug/L		124	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	2.38		ug/L		121	70 - 130
Diazinon (Qualitative)	1.97	2.02		ug/L		102	15 - 132
Dibenz(a,h)anthracene	1.97	2.21		ug/L		112	70 - 130
Diclorvos (DDVP)	1.97	2.52		ug/L		128	70 - 130
Dieldrin	1.97	2.23		ug/L		114	70 - 130
Diethylphthalate	1.97	2.14		ug/L		108	70 - 130
Dimethoate	1.97	1.16		ug/L		59	35 - 100
Dimethylphthalate	1.97	2.15		ug/L		109	70 - 130
Di-n-butyl phthalate	3.94	4.06		ug/L		103	70 - 130
Di-n-octyl phthalate	1.97	2.41		ug/L		123	70 - 130
Endosulfan I (Alpha)	1.97	2.02		ug/L		102	70 - 130
Endosulfan II (Beta)	1.97	2.26		ug/L		115	70 - 130
Endosulfan sulfate	1.97	2.28		ug/L		116	70 - 130
Endrin	1.97	2.28		ug/L		116	70 - 130
Endrin aldehyde	1.97	1.65		ug/L		84	70 - 130
EPTC	1.97	2.21		ug/L		112	70 - 130
Fluoranthene	1.97	2.14		ug/L		109	70 - 130
Fluorene	1.97	2.09		ug/L		106	70 - 130
gamma-Chlordane	1.97	1.87		ug/L		95	70 - 130
Heptachlor	1.97	2.26		ug/L		115	70 - 130

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: LCS 380-29128/3-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor epoxide (isomer B)	1.97	1.99		ug/L		101	70 - 130
Hexachlorobenzene	1.97	1.85		ug/L		94	70 - 130
Hexachlorocyclopentadiene	1.97	2.07		ug/L		105	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	2.23		ug/L		113	70 - 130
Isophorone	1.97	2.48		ug/L		126	70 - 130
Lindane	1.97	2.12		ug/L		108	70 - 130
Malathion	1.97	2.23		ug/L		113	70 - 130
Methoxychlor	1.97	2.43		ug/L		124	70 - 130
Metolachlor	1.97	2.34		ug/L		119	70 - 130
Metribuzin	1.97	1.73		ug/L		88	70 - 130
Molinate	1.97	2.27		ug/L		116	70 - 130
Naphthalene	1.97	2.13		ug/L		108	70 - 130
Parathion	1.97	2.47		ug/L		125	70 - 130
Pendimethalin (Penoxaline)	1.97	2.07		ug/L		105	70 - 130
Phenanthrene	1.97	2.04		ug/L		104	70 - 130
Propachlor	1.97	2.28		ug/L		116	70 - 130
Pyrene	1.97	2.14		ug/L		109	70 - 130
Simazine	1.97	2.08		ug/L		106	70 - 130
Terbacil	1.97	2.46		ug/L		125	70 - 130
Terbutylazine	1.97	2.11		ug/L		107	70 - 130
Thiobencarb	1.97	2.37		ug/L		121	70 - 130
trans-Nonachlor	1.97	1.87		ug/L		95	70 - 130
Trifluralin	1.97	1.93		ug/L		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	103		70 - 130
Triphenylphosphate	98		70 - 130
Perylene-d12	94		70 - 130

Lab Sample ID: LCSD 380-29128/4-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.97	1.97		ug/L		100	70 - 130	0	20
2,4'-DDE	1.97	1.95		ug/L		99	70 - 130	2	20
2,4'-DDT	1.97	2.18		ug/L		111	70 - 130	1	20
2,4-Dinitrotoluene	1.97	1.86		ug/L		94	70 - 130	0	20
2,6-Dinitrotoluene	1.97	2.02		ug/L		103	70 - 130	1	20
4,4'-DDD	1.97	2.20		ug/L		112	70 - 130	1	20
4,4'-DDE	1.97	2.02		ug/L		103	70 - 130	2	20
4,4'-DDT	1.97	2.21		ug/L		113	70 - 130	0	20
Acenaphthene	1.97	2.08		ug/L		106	70 - 130	0	20
Acenaphthylene	1.97	2.01		ug/L		102	70 - 130	0	20
Acetochlor	1.97	2.24		ug/L		114	70 - 130	1	20
Alachlor	1.97	2.12		ug/L		108	70 - 130	2	20
alpha-BHC	1.97	2.07		ug/L		105	70 - 130	2	20
alpha-Chlordane	1.97	1.91		ug/L		97	70 - 130	1	20

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: LCSD 380-29128/4-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Anthracene	1.97	2.05		ug/L		104	70 - 130	5	20	
Atrazine	1.97	1.98		ug/L		101	70 - 130	2	20	
Benz(a)anthracene	1.97	2.16		ug/L		110	70 - 130	1	20	
Benzo[a]pyrene	1.97	2.17		ug/L		111	70 - 130	3	20	
Benzo[b]fluoranthene	1.97	2.23		ug/L		114	70 - 130	1	20	
Benzo[g,h,i]perylene	1.97	2.27		ug/L		115	70 - 130	5	20	
Benzo[k]fluoranthene	1.97	2.30		ug/L		117	70 - 130	1	20	
beta-BHC	1.97	2.13		ug/L		109	70 - 130	1	20	
Bromacil	1.97	2.36		ug/L		120	70 - 130	0	20	
Butachlor	1.97	2.25		ug/L		115	70 - 130	0	20	
Butylbenzylphthalate	1.97	2.33		ug/L		118	70 - 130	1	20	
Caffeine	1.97	1.49		ug/L		76	45 - 137	4	20	
Chlorobenzilate	1.97	2.09	*1	ug/L		106	70 - 130	22	20	
Chloroneb	1.97	2.05		ug/L		104	70 - 130	3	20	
Chlorothalonil (Draconil, Bravo)	1.97	1.91		ug/L		97	70 - 130	1	20	
Chlorpyrifos	1.97	2.11		ug/L		108	70 - 130	0	20	
Chrysene	1.97	2.10		ug/L		107	70 - 130	0	20	
delta-BHC	1.97	2.13		ug/L		108	70 - 130	2	20	
Di(2-ethylhexyl)adipate	1.97	2.44		ug/L		124	70 - 130	0	20	
Bis(2-ethylhexyl) phthalate	1.97	2.36		ug/L		120	70 - 130	1	20	
Diazinon (Qualitative)	1.97	2.05		ug/L		104	15 - 132	2	20	
Dibenz(a,h)anthracene	1.97	2.37		ug/L		120	70 - 130	7	20	
Diclorvos (DDVP)	1.97	2.62	*+	ug/L		133	70 - 130	4	20	
Dieldrin	1.97	2.23		ug/L		114	70 - 130	0	20	
Diethylphthalate	1.97	2.10		ug/L		107	70 - 130	2	20	
Dimethoate	1.97	1.29		ug/L		66	35 - 100	10	20	
Dimethylphthalate	1.97	2.14		ug/L		109	70 - 130	0	20	
Di-n-butyl phthalate	3.93	4.13		ug/L		105	70 - 130	2	20	
Di-n-octyl phthalate	1.97	2.43		ug/L		124	70 - 130	1	20	
Endosulfan I (Alpha)	1.97	2.01		ug/L		102	70 - 130	1	20	
Endosulfan II (Beta)	1.97	2.25		ug/L		114	70 - 130	0	20	
Endosulfan sulfate	1.97	2.30		ug/L		117	70 - 130	1	20	
Endrin	1.97	2.32		ug/L		118	70 - 130	1	20	
Endrin aldehyde	1.97	1.55		ug/L		79	70 - 130	6	20	
EPTC	1.97	2.27		ug/L		116	70 - 130	3	20	
Fluoranthene	1.97	2.07		ug/L		105	70 - 130	3	20	
Fluorene	1.97	2.05		ug/L		104	70 - 130	2	20	
gamma-Chlordane	1.97	1.85		ug/L		94	70 - 130	1	20	
Heptachlor	1.97	2.15		ug/L		109	70 - 130	5	20	
Heptachlor epoxide (isomer B)	1.97	1.99		ug/L		101	70 - 130	0	20	
Hexachlorobenzene	1.97	1.85		ug/L		94	70 - 130	0	20	
Hexachlorocyclopentadiene	1.97	2.09		ug/L		106	70 - 130	1	20	
Indeno[1,2,3-cd]pyrene	1.97	2.37		ug/L		120	70 - 130	6	20	
Isophorone	1.97	2.44		ug/L		124	70 - 130	2	20	
Lindane	1.97	2.06		ug/L		105	70 - 130	3	20	
Malathion	1.97	2.24		ug/L		114	70 - 130	0	20	
Methoxychlor	1.97	2.41		ug/L		122	70 - 130	1	20	
Metolachlor	1.97	2.31		ug/L		118	70 - 130	1	20	
Metribuzin	1.97	1.78		ug/L		91	70 - 130	3	20	

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: LCSD 380-29128/4-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Molinate	1.97	2.29		ug/L		117	70 - 130	1	20	
Naphthalene	1.97	2.13		ug/L		108	70 - 130	0	20	
Parathion	1.97	2.39		ug/L		122	70 - 130	3	20	
Pendimethalin (Penoxaline)	1.97	2.02		ug/L		103	70 - 130	3	20	
Phenanthrene	1.97	2.00		ug/L		102	70 - 130	2	20	
Propachlor	1.97	2.25		ug/L		114	70 - 130	1	20	
Pyrene	1.97	2.08		ug/L		106	70 - 130	3	20	
Simazine	1.97	2.10		ug/L		107	70 - 130	1	20	
Terbacil	1.97	2.35		ug/L		119	70 - 130	4	20	
Terbutylazine	1.97	2.11		ug/L		108	70 - 130	0	20	
Thiobencarb	1.97	2.36		ug/L		120	70 - 130	1	20	
trans-Nonachlor	1.97	1.87		ug/L		95	70 - 130	0	20	
Trifluralin	1.97	1.93		ug/L		98	70 - 130	0	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	103		70 - 130
Triphenylphosphate	101		70 - 130
Perylene-d12	98		70 - 130

Lab Sample ID: MRL 380-29128/2-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
2,4'-DDD	0.0983	0.144		ug/L		147	50 - 150	
2,4'-DDE	0.0983	0.101		ug/L		102	50 - 150	
2,4'-DDT	0.0983	0.104		ug/L		106	50 - 150	
2,4-Dinitrotoluene	0.0983	0.0740	J	ug/L		75	50 - 150	
2,6-Dinitrotoluene	0.0983	0.0843	J	ug/L		86	50 - 150	
4,4'-DDD	0.0983	0.106		ug/L		107	50 - 150	
4,4'-DDE	0.0983	0.0991		ug/L		101	50 - 150	
4,4'-DDT	0.0983	0.103		ug/L		104	50 - 150	
Acenaphthene	0.0983	0.103		ug/L		104	50 - 150	
Acenaphthylene	0.0983	0.0914	J	ug/L		93	50 - 150	
Acetochlor	0.0492	0.0588	J	ug/L		120	50 - 150	
Alachlor	0.0492	0.0605		ug/L		123	50 - 150	
alpha-BHC	0.0983	0.101		ug/L		103	50 - 150	
alpha-Chlordane	0.0246	ND		ug/L		93	50 - 150	
Anthracene	0.0197	ND		ug/L		94	50 - 150	
Atrazine	0.0492	ND		ug/L		84	50 - 150	
Benz(a)anthracene	0.0492	0.0516		ug/L		105	50 - 150	
Benzo[a]pyrene	0.0197	0.0168	J	ug/L		85	50 - 150	
Benzo[b]fluoranthene	0.0197	0.0217		ug/L		110	50 - 150	
Benzo[g,h,i]perylene	0.0492	0.0457	J	ug/L		93	50 - 150	
Benzo[k]fluoranthene	0.0197	0.0197	J	ug/L		100	50 - 150	
beta-BHC	0.0983	0.0992		ug/L		101	50 - 150	
Bromacil	0.0983	0.111		ug/L		113	50 - 150	
Butachlor	0.0492	0.0576		ug/L		117	50 - 150	

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: MRL 380-29128/2-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Butylbenzylphthalate	0.147	0.172	J	ug/L		117	50 - 150
Caffeine	0.0492	0.0289	J	ug/L		59	50 - 150
Chlorobenzilate	0.0983	0.0894	J	ug/L		91	50 - 150
Chloroneb	0.0983	0.128		ug/L		130	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0983	0.191	^3+	ug/L		194	50 - 150
Chlorpyrifos	0.0492	0.0525		ug/L		107	50 - 150
Chrysene	0.0197	0.0222		ug/L		113	50 - 150
delta-BHC	0.0983	0.129		ug/L		131	50 - 150
Di(2-ethylhexyl)adipate	0.295	0.373	J	ug/L		126	50 - 150
Bis(2-ethylhexyl) phthalate	0.590	0.744		ug/L		126	50 - 150
Diazinon (Qualitative)	0.0983	0.0929	J	ug/L		94	15 - 132
Dibenz(a,h)anthracene	0.0492	0.0474	J	ug/L		96	50 - 150
Diclorvos (DDVP)	0.0492	0.0520		ug/L		106	50 - 150
Dieldrin	0.0983	0.128	J	ug/L		130	50 - 150
Diethylphthalate	0.147	0.156	J	ug/L		106	50 - 150
Dimethoate	0.0983	0.0356	J	ug/L		36	35 - 100
Dimethylphthalate	0.295	0.300	J	ug/L		102	50 - 150
Di-n-butyl phthalate	0.295	0.382	J	ug/L		130	49 - 243
Di-n-octyl phthalate	0.0983	0.108		ug/L		110	50 - 150
Endosulfan I (Alpha)	0.0983	0.135		ug/L		138	50 - 150
Endosulfan II (Beta)	0.0983	0.132		ug/L		134	50 - 150
Endosulfan sulfate	0.0983	0.118		ug/L		120	50 - 150
Endrin	0.0983	0.156	^3+	ug/L		159	50 - 150
Endrin aldehyde	0.0983	ND		ug/L		84	50 - 150
EPTC	0.0983	0.112		ug/L		114	50 - 150
Fluoranthene	0.0492	0.0531	J	ug/L		108	50 - 150
Fluorene	0.0492	ND		ug/L		93	50 - 150
gamma-Chlordane	0.0246	0.0219	J	ug/L		89	50 - 150
Heptachlor	0.0393	0.0515		ug/L		131	50 - 150
Heptachlor epoxide (isomer B)	0.0492	0.0466	J	ug/L		95	50 - 150
Hexachlorobenzene	0.0492	0.0503		ug/L		102	50 - 150
Hexachlorocyclopentadiene	0.0492	0.0561		ug/L		114	50 - 150
Indeno[1,2,3-cd]pyrene	0.0492	0.0440	J	ug/L		89	50 - 150
Isophorone	0.0983	0.126	J	ug/L		128	50 - 150
Lindane	0.0393	0.0469		ug/L		119	50 - 150
Malathion	0.0983	0.108		ug/L		110	50 - 150
Methoxychlor	0.0983	0.0946	J	ug/L		96	50 - 150
Metolachlor	0.0492	0.0566		ug/L		115	50 - 150
Metribuzin	0.0492	0.0343	J	ug/L		70	50 - 150
Molinate	0.0983	0.110		ug/L		112	50 - 150
Naphthalene	0.0983	0.117	J	ug/L		119	50 - 150
Parathion	0.0983	0.117		ug/L		119	50 - 150
Pendimethalin (Penoxaline)	0.0983	0.0795	J	ug/L		81	50 - 150
Phenanthrene	0.0197	0.0219	J	ug/L		111	50 - 150
Propachlor	0.0492	0.0492		ug/L		100	50 - 150
Pyrene	0.0492	0.0504		ug/L		103	50 - 150
Simazine	0.0492	0.0461	J	ug/L		94	50 - 150
Terbacil	0.0983	0.146		ug/L		148	50 - 150
Terbutylazine	0.0983	0.0917	J	ug/L		93	50 - 150

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: MRL 380-29128/2-A
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Thiobencarb	0.0983	0.120	J	ug/L		122	50 - 150
trans-Nonachlor	0.0246	0.0271	J	ug/L		110	50 - 150
Trifluralin	0.0983	0.0852	J	ug/L		87	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	105		70 - 130
Triphenylphosphate	97		70 - 130
Perylene-d12	91		70 - 130

Lab Sample ID: 380-33484-F-1-A MS
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		1.99	2.03		ug/L		102	70 - 130
2,4'-DDE	ND		1.99	2.00		ug/L		101	70 - 130
2,4'-DDT	ND		1.99	2.25		ug/L		113	70 - 130
2,4-Dinitrotoluene	ND		1.99	1.97		ug/L		99	70 - 130
2,6-Dinitrotoluene	ND		1.99	2.08		ug/L		105	70 - 130
4,4'-DDD	ND		1.99	2.26		ug/L		114	70 - 130
4,4'-DDE	ND		1.99	2.05		ug/L		103	70 - 130
4,4'-DDT	ND		1.99	2.28		ug/L		115	70 - 130
Acenaphthene	ND		1.99	2.08		ug/L		105	70 - 130
Acenaphthylene	ND		1.99	2.10		ug/L		106	70 - 130
Acetochlor	ND		1.99	2.40		ug/L		121	70 - 130
Alachlor	ND		1.99	2.24		ug/L		113	70 - 130
alpha-BHC	ND		1.99	2.06		ug/L		104	70 - 130
alpha-Chlordane	ND		1.99	1.93		ug/L		97	70 - 130
Anthracene	ND		1.99	1.54		ug/L		78	70 - 130
Atrazine	ND		1.99	2.03		ug/L		102	70 - 130
Benz(a)anthracene	ND		1.99	2.20		ug/L		111	70 - 130
Benzo[a]pyrene	ND		1.99	2.02		ug/L		102	70 - 130
Benzo[b]fluoranthene	ND		1.99	2.31		ug/L		117	70 - 130
Benzo[g,h,i]perylene	ND		1.99	2.22		ug/L		112	70 - 130
Benzo[k]fluoranthene	ND		1.99	2.29		ug/L		115	70 - 130
beta-BHC	ND		1.99	2.13		ug/L		107	70 - 130
Bromacil	ND		1.99	2.52		ug/L		127	70 - 130
Butachlor	ND		1.99	2.30		ug/L		116	70 - 130
Butylbenzylphthalate	ND		1.99	2.47		ug/L		124	70 - 130
Caffeine	ND		1.99	1.80		ug/L		91	46 - 144
Chlorobenzilate	ND	*1	1.99	2.25		ug/L		113	70 - 130
Chloroneb	ND		1.99	1.98		ug/L		100	70 - 130
Chlorothalonil (Draconil, Bravo)	ND	^3+	1.99	1.94		ug/L		98	70 - 130
Chlorpyrifos	ND		1.99	2.20		ug/L		111	70 - 130
Chrysene	ND		1.99	2.10		ug/L		106	70 - 130
delta-BHC	ND		1.99	2.17		ug/L		109	70 - 130
Di(2-ethylhexyl)adipate	ND		1.99	2.47		ug/L		124	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.99	2.21		ug/L		112	70 - 130

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: 380-33484-F-1-A MS
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Diazinon (Qualitative)	ND		1.99	2.10		ug/L		106	15 - 132
Dibenz(a,h)anthracene	ND		1.99	2.36		ug/L		119	70 - 130
Diclorvos (DDVP)	ND	*+ F1	1.99	2.60	F1	ug/L		131	70 - 130
Dieldrin	ND		1.99	2.26		ug/L		114	70 - 130
Diethylphthalate	ND		1.99	2.15		ug/L		109	70 - 130
Dimethoate	ND		1.99	1.60		ug/L		81	34 - 111
Dimethylphthalate	ND		1.99	2.09		ug/L		105	70 - 130
Di-n-butyl phthalate	ND		3.97	4.24		ug/L		107	70 - 130
Di-n-octyl phthalate	ND		1.99	2.27		ug/L		115	70 - 130
Endosulfan I (Alpha)	ND		1.99	2.04		ug/L		103	70 - 130
Endosulfan II (Beta)	ND		1.99	2.28		ug/L		115	70 - 130
Endosulfan sulfate	ND		1.99	2.38		ug/L		120	70 - 130
Endrin	ND	^3+	1.99	2.33		ug/L		117	70 - 130
Endrin aldehyde	ND		1.99	1.52		ug/L		77	70 - 130
EPTC	ND		1.99	2.38		ug/L		120	70 - 130
Fluoranthene	ND		1.99	2.15		ug/L		108	70 - 130
Fluorene	ND		1.99	2.09		ug/L		105	70 - 130
gamma-Chlordane	ND		1.99	1.97		ug/L		99	70 - 130
Heptachlor	ND		1.99	2.17		ug/L		110	70 - 130
Heptachlor epoxide (isomer B)	ND		1.99	2.15		ug/L		108	70 - 130
Hexachlorobenzene	ND		1.99	1.87		ug/L		94	70 - 130
Hexachlorocyclopentadiene	ND		1.99	2.10		ug/L		106	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.99	2.38		ug/L		120	70 - 130
Isophorone	ND		1.99	2.51		ug/L		126	70 - 130
Lindane	ND		1.99	2.11		ug/L		106	70 - 130
Malathion	ND		1.99	2.36		ug/L		119	70 - 130
Methoxychlor	ND		1.99	2.46		ug/L		124	70 - 130
Metolachlor	ND		1.99	2.40		ug/L		121	70 - 130
Metribuzin	ND		1.99	2.06		ug/L		104	70 - 130
Molinate	ND		1.99	2.28		ug/L		115	70 - 130
Naphthalene	ND		1.99	2.19		ug/L		110	70 - 130
Parathion	ND		1.99	2.50		ug/L		126	70 - 130
Pendimethalin (Penoxaline)	ND		1.99	2.15		ug/L		108	70 - 130
Phenanthrene	ND		1.99	2.06		ug/L		104	70 - 130
Propachlor	ND		1.99	2.24		ug/L		113	70 - 130
Pyrene	ND		1.99	2.16		ug/L		109	70 - 130
Simazine	ND		1.99	2.09		ug/L		105	70 - 130
Terbacil	ND	F1	1.99	2.64	F1	ug/L		133	70 - 130
Terbutylazine	ND		1.99	2.14		ug/L		108	70 - 130
Thiobencarb	ND		1.99	2.42		ug/L		122	70 - 130
trans-Nonachlor	ND		1.99	1.93		ug/L		97	70 - 130
Trifluralin	ND		1.99	1.91		ug/L		96	70 - 130

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	107		70 - 130
Triphenylphosphate	107		70 - 130
Perylene-d12	100		70 - 130

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: 380-33493-F-1-A DU
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
2,4'-DDD	ND		ND		ug/L		NC	20
2,4'-DDE	ND		ND		ug/L		NC	20
2,4'-DDT	ND		ND		ug/L		NC	20
2,4-Dinitrotoluene	ND		ND		ug/L		NC	20
2,6-Dinitrotoluene	ND		ND		ug/L		NC	20
4,4'-DDD	ND		ND		ug/L		NC	20
4,4'-DDE	ND		ND		ug/L		NC	20
4,4'-DDT	ND		ND		ug/L		NC	20
Acenaphthene	ND		ND		ug/L		NC	20
Acenaphthylene	ND		ND		ug/L		NC	20
Acetochlor	ND		ND		ug/L		NC	20
Alachlor	ND		ND		ug/L		NC	20
alpha-BHC	ND		ND		ug/L		NC	20
alpha-Chlordane	ND		ND		ug/L		NC	20
Anthracene	ND		ND		ug/L		NC	20
Atrazine	ND		ND		ug/L		NC	20
Benz(a)anthracene	ND		ND		ug/L		NC	20
Benzo[a]pyrene	ND		ND		ug/L		NC	20
Benzo[b]fluoranthene	ND		ND		ug/L		NC	20
Benzo[g,h,i]perylene	ND		ND		ug/L		NC	20
Benzo[k]fluoranthene	ND		ND		ug/L		NC	20
beta-BHC	ND		ND		ug/L		NC	20
Bromacil	ND		ND		ug/L		NC	20
Butachlor	ND		ND		ug/L		NC	20
Butylbenzylphthalate	ND		ND		ug/L		NC	20
Caffeine	ND		ND		ug/L		NC	20
Chlorobenzilate	ND	*1	ND	*1	ug/L		NC	20
Chloroneb	ND		ND		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	ND	^3+	ND		ug/L		NC	20
Chlorpyrifos	ND		ND		ug/L		NC	20
Chrysene	ND		ND		ug/L		NC	20
delta-BHC	ND		ND		ug/L		NC	20
Di(2-ethylhexyl)adipate	ND		ND		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	ND		ND		ug/L		NC	20
Diazinon (Qualitative)	ND		ND		ug/L		NC	20
Dibenz(a,h)anthracene	ND		ND		ug/L		NC	20
Diclorvos (DDVP)	ND	*+	ND	*+	ug/L		NC	20
Dieldrin	ND		ND		ug/L		NC	20
Diethylphthalate	ND		ND		ug/L		NC	20
Dimethoate	ND		ND		ug/L		NC	20
Dimethylphthalate	ND		ND		ug/L		NC	20
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	^3+	ND		ug/L		NC	20
Endrin aldehyde	ND		ND		ug/L		NC	20

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: 380-33493-F-1-A DU
Matrix: Water
Analysis Batch: 29188

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 29128

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
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
DU DU								
Surrogate	%Recovery	Qualifier			Limits			
2-Nitro-m-xylene	104				70 - 130			
Triphenylphosphate	98				70 - 130			
Perylene-d12	100				70 - 130			

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

Lab Sample ID: 103180-B1
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Acenaphthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Acenaphthylene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: 103180-B1
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Biphenyl	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Chrysene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Dibenzothiophene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		01/09/23 00:00	01/25/23 17:49	1
Fluoranthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Fluorene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Naphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Perylene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Phenanthrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	64		27 - 133	01/09/23 00:00	01/25/23 17:49	1
(d10-Phenanthrene)	67		43 - 129	01/09/23 00:00	01/25/23 17:49	1
(d12-Chrysene)	54		52 - 144	01/09/23 00:00	01/25/23 17:49	1
(d12-Perylene)	51		36 - 161	01/09/23 00:00	01/25/23 17:49	1
(d8-Naphthalene)	61		25 - 125	01/09/23 00:00	01/25/23 17:49	1

Lab Sample ID: 103180-BS1
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.636		µg/L		127	31 - 128
1-Methylphenanthrene	0.5	0.549		µg/L		110	66 - 127
2,3,5-Trimethylnaphthalene	1	0.651		µg/L		65	55 - 122
2,6-Dimethylnaphthalene	0.5	0.598		µg/L		120	48 - 120
2-Methylnaphthalene	1.5	1.95		µg/L		130	47 - 130
Acenaphthene	1.5	1.96		µg/L		131	53 - 131
Acenaphthylene	1.5	2.04		µg/L		136	43 - 140
Anthracene	1.5	2.01		µg/L		134	58 - 135
Benz[a]anthracene	1.5	1.62		µg/L		108	55 - 145
Benzo[a]pyrene	1.5	1.6		µg/L		107	51 - 143
Benzo[b]fluoranthene	1.5	1.74		µg/L		116	46 - 165
Benzo[e]pyrene	0.5	0.505		µg/L		101	42 - 152
Benzo[g,h,i]perylene	1.5	1.71		µg/L		114	63 - 133
Benzo[k]fluoranthene	1.5	1.7		µg/L		113	56 - 145
Biphenyl	1	0.693		µg/L		69	56 - 119

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: 103180-BS1
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chrysene	1.5	1.61		µg/L		107	56 - 141
Dibenz[a,h]anthracene	1.5	1.88		µg/L		125	55 - 150
Dibenzo[a,l]pyrene	0.5	0.424		µg/L		85	50 - 150
Dibenzothiophene	0.5	0.589		µg/L		118	46 - 126
Disalicylidenepropanediamine	50	39.7		µg/L		79	50 - 150
Fluoranthene	1.5	2.07		µg/L		138	60 - 146
Fluorene	2	2.08		µg/L		104	58 - 131
Indeno[1,2,3-cd]pyrene	1.5	1.8		µg/L		120	50 - 151
Naphthalene	1.5	1.85		µg/L		123	41 - 126
Perylene	0.5	0.515		µg/L		103	48 - 141
Phenanthrene	2	2.05		µg/L		102	67 - 127
Pyrene	1.5	1.98		µg/L		132	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	62		27 - 133
(d10-Phenanthrene)	63		43 - 129
(d12-Chrysene)	54		52 - 144
(d12-Perylene)	52		36 - 161
(d8-Naphthalene)	58		25 - 125

Lab Sample ID: 103180-BS2
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.603		µg/L		121	31 - 128	5	30
1-Methylphenanthrene	0.5	0.537		µg/L		107	66 - 127	3	30
2,3,5-Trimethylnaphthalene	1	0.603		µg/L		60	55 - 122	8	30
2,6-Dimethylnaphthalene	0.5	0.589		µg/L		118	48 - 120	2	30
2-Methylnaphthalene	1.5	1.82		µg/L		121	47 - 130	7	30
Acenaphthene	1.5	1.88		µg/L		125	53 - 131	5	30
Acenaphthylene	1.5	1.95		µg/L		130	43 - 140	5	30
Anthracene	1.5	1.94		µg/L		129	58 - 135	4	30
Benz[a]anthracene	1.5	1.53		µg/L		102	55 - 145	6	30
Benzo[a]pyrene	1.5	1.53		µg/L		102	51 - 143	5	30
Benzo[b]fluoranthene	1.5	1.66		µg/L		111	46 - 165	4	30
Benzo[e]pyrene	0.5	0.497		µg/L		99	42 - 152	2	30
Benzo[g,h,i]perylene	1.5	1.64		µg/L		109	63 - 133	4	30
Benzo[k]fluoranthene	1.5	1.59		µg/L		106	56 - 145	6	30
Biphenyl	1	0.655		µg/L		65	56 - 119	4	30
Chrysene	1.5	1.53		µg/L		102	56 - 141	5	30
Dibenz[a,h]anthracene	1.5	1.8		µg/L		120	55 - 150	4	30
Dibenzo[a,l]pyrene	0.5	0.426		µg/L		85	50 - 150	0	30
Dibenzothiophene	0.5	0.566		µg/L		113	46 - 126	4	30
Disalicylidenepropanediamine	50	46		µg/L		92	50 - 150	15	30
Fluoranthene	1.5	2.05		µg/L		137	60 - 146	1	30
Fluorene	2	1.99		µg/L		100	58 - 131	4	30
Indeno[1,2,3-cd]pyrene	1.5	1.76		µg/L		117	50 - 151	3	30

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: 103180-BS2
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene	1.5	1.72		µg/L		115	41 - 126	7	30
Perylene	0.5	0.498		µg/L		100	48 - 141	3	30
Phenanthrene	2	1.98		µg/L		99	67 - 127	3	30
Pyrene	1.5	1.95		µg/L		130	54 - 156	2	30

Surrogate	LCS DUP %Recovery	LCS DUP Qualifier	Limits
(d10-Acenaphthene)	59		27 - 133
(d10-Phenanthrene)	62		43 - 129
(d12-Chrysene)	52		52 - 144
(d12-Perylene)	50		36 - 161
(d8-Naphthalene)	54		25 - 125

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

Lab Sample ID: 23VG39A03B
Matrix: WATER
Analysis Batch: 23VG39A03

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			01/09/23 16:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE					01/09/23 16:09	1

Lab Sample ID: 23VG39A03L
Matrix: WATER
Analysis Batch: 23VG39A03

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	0.426		mg/L		85	60 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOFLUOROBENZENE	97		70 - 130

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

Lab Sample ID: 23DSA012WB
Matrix: WATER
Analysis Batch: 23DSA012W

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			01/12/23 13:50	1
JP5	ND	U	0.05		mg/L			01/12/23 13:50	1
JP8	ND	U	0.05		mg/L			01/12/23 13:50	1
MOTOR OIL	ND	U	0.05		mg/L			01/12/23 13:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE					01/12/23 13:50	1

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33504-1

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

Lab Sample ID: 23DSA012WB
Matrix: WATER
Analysis Batch: 23DSA012W

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

<i>Surrogate</i>	<i>MB</i>	<i>MB</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
HEXACOSANE	%	%			01/12/23 13:50	1

Lab Sample ID: 23DSA012WL
Matrix: WATER
Analysis Batch: 23DSA012W

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

<i>Analyte</i>	<i>Spike</i>	<i>LCS</i>	<i>LCS</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>
	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>			<i>Limits</i>	
DIESEL	2.5	2.94		mg/L		118	50 - 130

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
BROMOBENZENE	102		60 - 130
HEXACOSANE	96		60 - 130

Lab Sample ID: 23J5A012WL
Matrix: WATER
Analysis Batch: 23DSA012W

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

<i>Analyte</i>	<i>Spike</i>	<i>LCS</i>	<i>LCS</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>
	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>			<i>Limits</i>	
JP5	2.5	2.42		mg/L		97	30 - 160

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
BROMOBENZENE	95		60 - 130
HEXACOSANE	81		60 - 130

Lab Sample ID: 23J8A012WL
Matrix: WATER
Analysis Batch: 23DSA012W

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

<i>Analyte</i>	<i>Spike</i>	<i>LCS</i>	<i>LCS</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>
	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>			<i>Limits</i>	
JP8	2.5	2.43		mg/L		97	30 - 160

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
BROMOBENZENE	99		60 - 130
HEXACOSANE	77		60 - 130

QC Association Summary

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

Job ID: 380-33504-1

GC/MS Semi VOA

Prep Batch: 29128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33504-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	525.2	
MB 380-29128/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-29128/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-29128/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-29128/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-33484-F-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-33493-F-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 29188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33504-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	525.2	29128
MB 380-29128/1-A	Method Blank	Total/NA	Water	525.2	29128
LCS 380-29128/3-A	Lab Control Sample	Total/NA	Water	525.2	29128
LCSD 380-29128/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	29128
MRL 380-29128/2-A	Lab Control Sample	Total/NA	Water	525.2	29128
380-33484-F-1-A MS	Matrix Spike	Total/NA	Water	525.2	29128
380-33493-F-1-A DU	Duplicate	Total/NA	Water	525.2	29128

Subcontract

Analysis Batch: O-40096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33504-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40096_P
103180-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40096_P
103180-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40096_P
103180-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40096_P

Analysis Batch: 23DSA012W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33504-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSA012WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSA012WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5A012WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8A012WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 23VG39A03

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33504-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

QC Association Summary

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

Job ID: 380-33504-1

Subcontract (Continued)

Analysis Batch: 23VG39A03 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33504-2	TB: HALAWA WELLS UNITS 1 & 2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39A03B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39A03L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40096_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33504-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	EPA_625	
103180-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
103180-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
103180-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	



Lab Chronicle

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

Job ID: 380-33504-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-1

Date Collected: 01/05/23 10:00

Matrix: Drinking Water

Date Received: 01/06/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			29128	N8NE	EA MON	01/07/23 12:59
Total/NA	Analysis	525.2		1	29188	Q8LA	EA MON	01/09/23 17:26
Total/NA	Prep	EPA_625		1	O-40096_P			01/09/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40096	YC		01/26/23 02:24
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39A03	SCerva		01/10/23 00:33
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSA012W	SDees		01/12/23 16:54

Client Sample ID: TB: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-33504-2

Date Collected: 01/05/23 10:00

Matrix: Water

Date Received: 01/06/23 09:50

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	23VG39A03	SCerva		01/10/23 01:09

Laboratory References:

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

EA MON = Eurofins Drinking Water Testing Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Accreditation/Certification Summary

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

Job ID: 380-33504-1

Laboratory: Eurofins Drinking Water Testing Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	02-28-23

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: 380-33504-1

Laboratory: Eurofins Drinking Water Testing Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date
-----------	---------	-----------------------	-----------------

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	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: 380-33504-1

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 Drinking Water Testing Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100



Sample Summary

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

Job ID: 380-33504-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-33504-1	HALAWA WELLS UNITS 1 & 2	Drinking Water	01/05/23 10:00	01/06/23 09:50
380-33504-2	TB: HALAWA WELLS UNITS 1 & 2	Water	01/05/23 10:00	01/06/23 09:50

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



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

Date: 02-01-2023
EMAX Batch No.: 23A048

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-33504

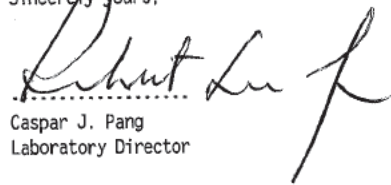
Enclosed is the Laboratory report for samples received on 01/09/23.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-33504-1	A048-01	01/05/23	WATER	TPH GASOLINE TPH
380-33504-2	A048-02	01/05/23	WATER	TPH GASOLINE

The results are summarized on the following pages.

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

Sincerely yours,


Caspar J. Pang
Laboratory Director

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

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

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

Monrovia, CA (Suite 100)
 750 Royal Oaks Drive Suite 100
 Monrovia, CA 91016
 Phone: 626-366-1100

23AGY8

Chain of Custody Record



Environment Testing



Client Information (Sub Contract Lab) Client Contact: Rachelle Arada, Rachelle Shipping/Receiving: Rachelle.Arada@et.eurofins.com Company: EMAX Laboratories Inc Address: 3051 Fujita Street, Torrance, CA, 90505 City: Torrance State, Zip: CA, 90505 Phone: PO #: WO #: Email: Project #: 38001111 RED-HILL Site: Honolulu BWS Sites		Lab PI#: Arada, Rachelle E-Mail: Rachelle.Arada@et.eurofins.com State of Origin: Hawaii Accreditations Required (See note): State - Hawaii		COC No: 380-32816.1 Page: Page 1 of 1 Job #: 380-33504-1 Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma L - EDA Z - other (specify) Other:	
Due Date Requested: 1/20/2023 TAT Requested (days):		Analysis Requested		Total Number of Containers: 6	
Sample Date: 1/5/23 Sample Time: 10:00 Hawaiian Sample Type (C=comp, G=grab): Water Matrix (Water, Swab, Open-air, Soil, Tissue, Air): Water		Perform MS/MSD (Yes or No): X Field Filtered Sample (Yes or No): X SUB (8015 Gas (Furgle) LL (EAL)) 8015 Gas SUB (8015 LL DROM/RO/PS/JP8) 8015 LL DROM/RO/PS/JP8		Special Instructions/Note: See Attached Instructions See Attached Instructions	
Sample Identification - Client ID (Lab ID) HALAWA WELLS UNITS 1 & 2 (380-33504-1) TB: HALAWA WELLS UNITS 1 & 2 (380-33504-2)		Sample Date: 1/5/23 Sample Time: 10:00 Hawaiian Sample Type (C=comp, G=grab): Water Matrix (Water, Swab, Open-air, Soil, Tissue, Air): Water		Special Instructions/Note: See Attached Instructions See Attached Instructions	
<p>Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.</p>					
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2					
Empty Kit Relinquished by: Date: 1-9-23 1000 Relinquished by: Date/Time: 1-9-23 1200 Relinquished by: Date/Time:					
Relinquished by: Date/Time:					
Relinquished by: Date/Time:					
Relinquished by: Date/Time:					
Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks: Temp. 3.4/3.2					





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>23A048</u> Recipient <u>Maria Rivera</u> Date <u>01/09/23</u> Time <u>12:00</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)	<input type="checkbox"/> High concentrations expected	<input type="checkbox"/> From Superfund Site	<input type="checkbox"/> Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 <u>3.4/3.2</u>	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
Thermometer: _____	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
	A - S/N _____	B - S/N <u>210760237</u>	C - S/N _____
			D - S/N <u>210760272</u>

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	4	D14		R4
1	5,6	D1	JPS/JPS Analysis not on label	R1, R8
2	7,8	D22	2nd Date/Time reads: 12/5/22 at 8:00	R8, R1

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

AB 1/9/23

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? YES NO

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

REVIEWS:

Sample Labeling Maria Rivera Allyssa SRF Allyssa
 Date 01/09/23 1/9/23 Date 1/9/23

PM AB
 Date 1/9/23

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

380-33504

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

SDG#: 23A048



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-33504

SDG : 23A048

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

A total of two(2) water samples were received on 01/09/23 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VG39A03B - 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. VG39A03L/VG39A03C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG. Gasoline was within MS QC limits in A046-01M/A046-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL
Project : 380-33504
SDG NO. : 23A048
Instrument ID : GCT039

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes

WATER
FN - Filename
% Moist - Percent Moisture



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

SAMPLE RESULTS

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 01/05/23 10:00
Project : 380-33504	Date Received: 01/09/23
Batch No. : 23A048	Date Extracted: 01/10/23 00:33
Sample ID : 380-33504-1	Date Analyzed: 01/10/23 00:33
Lab Samp ID: A048-01	Dilution Factor: 1
Lab File ID: EA09019A	Matrix: WATER
Ext Btch ID: 23VG39A03	% Moisture: NA
Calib. Ref.: EA09014A	Instrument ID: 39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0337	0.0400	84	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 01/05/23 10:00
Project : 380-33504	Date Received: 01/09/23
Batch No. : 23A048	Date Extracted: 01/10/23 01:09
Sample ID : 380-33504-2	Date Analyzed: 01/10/23 01:09
Lab Samp ID: A048-02	Dilution Factor: 1
Lab File ID: EA09020A	Matrix: WATER
Ext Btch ID: 23VG39A03	% Moisture: NA
Calib. Ref.: EA09014A	Instrument ID: 39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0324	0.0400	81	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: 01/09/23 16:09
Project : 380-33504	Date Received: 01/09/23
Batch No. : 23A048	Date Extracted: 01/09/23 16:09
Sample ID : MBLK1W	Date Analyzed: 01/09/23 16:09
Lab Samp ID: VG39A03B	Dilution Factor: 1
Lab File ID: EA09005A	Matrix: WATER
Ext Btch ID: 23VG39A03	% Moisture: NA
Calib. Ref.: EA09003A	Instrument ID: 39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0313	0.0400	78	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-33504
BATCH NO. : 23A048
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39A03B	VG39A03L	VG39A03C
LAB FILE ID	: EA09005A	EA09006A	EA09013A
DATE PREPARED	: 01/09/23 16:09	01/09/23 16:45	01/09/23 20:57
DATE ANALYZED	: 01/09/23 16:09	01/09/23 16:45	01/09/23 20:57
PREP BATCH	: 23VG39A03	23VG39A03	23VG39A03
CALIBRATION REF:	EA09003A	EA09003A	EA09003A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QLLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.426	85	0.500	0.506	101	17	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QLLimit (%)
Bromofluorobenzene	0.0400	0.0387	97	0.0400	0.0434	109	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 : 380-33484
BATCH NO. : 23A046
METHOD : 5030B/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : 380-33484-1	380-33484-1MS	380-33484-1MSD
LAB SAMPLE ID : A046-01	A046-01M	A046-01S
LAB FILE ID : EA09010A	EA09011A	EA09012A
DATE PREPARED : 01/09/23 19:09	01/09/23 19:46	01/09/23 20:21
DATE ANALYZED : 01/09/23 19:09	01/09/23 19:46	01/09/23 20:21
PREP BATCH : 23VG39A03	23VG39A03	23VG39A03
CALIBRATION REF: EA09003A	EA09003A	EA09003A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QLLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.535	107	0.500	0.518	104	3	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QLLimit (%)
Bromofluorobenzene	0.0400	0.0450	113	0.0400	0.0452	113	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-33504

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23A048



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-33504

SDG : 23A048

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 01/09/23 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSA012WB - 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. DSA012WL/DSA012WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

Surrogate

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

Sample Analysis

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.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-33504

SDG : 23A048

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 01/09/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSA012WB - 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. J5A012WL/J5A012WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

Surrogate

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

Sample Analysis

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.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-33504

SDG : 23A048

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 01/09/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSA012WB - 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. J8A012WL/J8A012WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

Surrogate

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

Sample Analysis

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-33504
 Laboratory Sample ID : DSA012WB : 23A048
 Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
380-33504-1	DSA012WB	1	NA	01/12/2313:50	01/10/2312:00	LA12010A	LA12004A	23DSA012W	Method Blank
	DSA012WL	1	NA	01/12/2314:08	01/10/2312:00	LA12011A	LA12004A	23DSA012W	Lab Control Sample (LCS)
	DSA012WC	1	NA	01/12/2314:27	01/10/2312:00	LA12012A	LA12004A	23DSA012W	LCS Duplicate
	A048-01	1	NA	01/12/2316:54	01/10/2312:00	LA12020A	LA12004A	23DSA012W	Field Sample

WATER

FN - Filename
 % Moist - Percent Moisture



LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	SDG NO. : 23A048
Project : 380-33504	Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
					WATER				
MBLK1W	DSA012WB	1	NA	01/12/2313:50	01/10/2312:00	LA12010A	LA12005A	23DSA012W	Method Blank
LCS1W	J5A012WL	1	NA	01/12/2314:46	01/10/2312:00	LA12013A	LA12005A	23DSA012W	Lab Control Sample (LCS)
LCD1W	J5A012WC	1	NA	01/12/2315:04	01/10/2312:00	LA12014A	LA12005A	23DSA012W	LCS Duplicate
380-33504-1	A048-01	1	NA	01/12/2316:54	01/10/2312:00	LA12020A	LA12005A	23DSA012W	Field Sample

FN - Filename
% Moist - Percent Moisture



LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-33504
 SDG NO. : 23A048
 Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	WATER	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
	DSAO12WB	1	NA	01/12/2313:50		01/10/2312:00	LA12010A	LA12006A	23DSA012W	Method Blank
MBLK1W	J8A012WL	1	NA	01/12/2315:22		01/10/2312:00	LA12015A	LA12006A	23DSA012W	Lab Control Sample (LCS)
LCS1W	J8A012WC	1	NA	01/12/2315:41		01/10/2312:00	LA12016A	LA12006A	23DSA012W	LCS Duplicate
LCD1W	A048-01	1	NA	01/12/2316:54		01/10/2312:00	LA12020A	LA12006A	23DSA012W	Field Sample
380-33504-1										

FN - Filename
 % Moist - Percent Moisture



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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 01/05/23 10:00
Project : 380-33504	Date Received: 01/09/23
Batch No. : 23A048	Date Extracted: 01/10/23 12:00
Sample ID : 380-33504-1	Date Analyzed: 01/12/23 16:54
Lab Samp ID: 23A048-01	Dilution Factor: 1
Lab File ID: LA12020A	Matrix: WATER
Ext Btch ID: 23DSA012W	% Moisture: NA
Calib. Ref.: LA12004A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.028	0.014
Motor Oil	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.516	0.555	93	60-130
Hexacosane	0.114	0.139	82	60-130

Notes:

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 900ml Final Volume : 5ml
Prepared by : RVilla/POreto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/05/23 10:00
Project	: 380-33504	Date Received:	01/09/23
Batch No.	: 23A048	Date Extracted:	01/10/23 12:00
Sample ID	: 380-33504-1	Date Analyzed:	01/12/23 16:54
Lab Samp ID:	23A048-01	Dilution Factor:	1
Lab File ID:	LA12020A	Matrix:	WATER
Ext Btch ID:	23DSA012W	% Moisture:	NA
Calib. Ref.:	LA12005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.516	0.555	93	60-130
Hexacosane	0.114	0.139	82	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 900ml

Final Volume : 5ml

Prepared by : RVilla/POreto

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/05/23 10:00
Project	: 380-33504	Date Received:	01/09/23
Batch No.	: 23A048	Date Extracted:	01/10/23 12:00
Sample ID	: 380-33504-1	Date Analyzed:	01/12/23 16:54
Lab Samp ID:	23A048-01	Dilution Factor:	1
Lab File ID:	LA12020A	Matrix:	WATER
Ext Btch ID:	23DSA012W	% Moisture:	NA
Calib. Ref.:	LA12006A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.516	0.555	93	60-130
Hexacosane	0.114	0.139	82	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 900ml

Final Volume : 5ml

Prepared by : RVilla/P0reto

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: 01/10/23 12:00
Project    : 380-33504                   Date Received: 01/10/23
Batch No.  : 23A048                       Date Extracted: 01/10/23 12:00
Sample ID  : MBLK1W                       Date Analyzed: 01/12/23 13:50
Lab Samp ID: DSA012WB                     Dilution Factor: 1
Lab File ID: LA12010A                     Matrix: WATER
Ext Btch ID: 23DSA012W                    % Moisture: NA
Calib. Ref.: LA12004A                     Instrument ID: D5
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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	0.436	0.500	87	60-130	
Hexacosane	0.106	0.125	85	60-130	

Notes:

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml Final Volume : 5ml
Prepared by : RVilla/POreto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-33504
BATCH NO. : 23A048
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSA012WB	DSA012WL	DSA012WC
LAB FILE ID	: LA12010A	LA12011A	LA12012A
DATE PREPARED	: 01/10/23 12:00	01/10/23 12:00	01/10/23 12:00
DATE ANALYZED	: 01/12/23 13:50	01/12/23 14:08	01/12/23 14:27
PREP BATCH	: 23DSA012W	23DSA012W	23DSA012W
CALIBRATION REF:	LA12004A	LA12004A	LA12004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.50	2.94	118	2.50	2.82	113	4	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.510	102	0.500	0.529	106	60-130
Hexacosane	0.125	0.120	96	0.125	0.115	92	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

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=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 01/10/23 12:00
Project    : 380-33504                   Date Received: 01/10/23
Batch No.  : 23A048                       Date Extracted: 01/10/23 12:00
Sample ID  : MBLK1W                       Date Analyzed: 01/12/23 13:50
Lab Samp ID: DSA012WB                     Dilution Factor: 1
Lab File ID: LA12010A                     Matrix: WATER
Ext Btch ID: 23DSA012W                   % Moisture: NA
Calib. Ref.: LA12005A                    Instrument ID: D5
=====
  
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PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.436	0.500	87	60-130
Hexacosane	0.106	0.125	85	60-130

Notes:

RL : Reporting Limit
 Parameter H-C Range
 JP5 C8-C18
 Reported ND at RL quantitated per pattern recognition.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-33504
BATCH NO. : 23A048
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSA012WB	J5A012WL	J5A012WC
LAB FILE ID	: LA12010A	LA12013A	LA12014A
DATE PREPARED	: 01/10/23 12:00	01/10/23 12:00	01/10/23 12:00
DATE ANALYZED	: 01/12/23 13:50	01/12/23 14:46	01/12/23 15:04
PREP BATCH	: 23DSA012W	23DSA012W	23DSA012W
CALIBRATION REF:	LA12005A	LA12005A	LA12005A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.50	2.42	97	2.50	2.42	97	0	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.477	95	0.500	0.483	97	60-130
Hexacosane	0.125	0.101	81	0.125	0.102	82	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

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=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 01/10/23 12:00
Project    : 380-33504                   Date Received: 01/10/23
Batch No.  : 23A048                       Date Extracted: 01/10/23 12:00
Sample ID  : MBLK1W                       Date Analyzed: 01/12/23 13:50
Lab Samp ID: DSA012WB                     Dilution Factor: 1
Lab File ID: LA12010A                     Matrix: WATER
Ext Btch ID: 23DSA012W                   % Moisture: NA
Calib. Ref.: LA12006A                    Instrument ID: D5
=====
  
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.436	0.500	87	60-130
Hexacosane	0.106	0.125	85	60-130

Notes:

RL : Reporting Limit
 Parameter H-C Range
 JP8 C8-C18
 Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml Final Volume : 5ml
 Prepared by : RVilla/P0reto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-33504
BATCH NO. : 23A048
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSA012WB	J8A012WL	J8A012WC
LAB FILE ID	: LA12010A	LA12015A	LA12016A
DATE PREPARED	: 01/10/23 12:00	01/10/23 12:00	01/10/23 12:00
DATE ANALYZED	: 01/12/23 13:50	01/12/23 15:22	01/12/23 15:41
PREP BATCH	: 23DSA012W	23DSA012W	23DSA012W
CALIBRATION REF:	LA12006A	LA12006A	LA12006A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.50	2.43	97	2.50	2.55	102	5	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.493	99	0.500	0.488	98	60-130
Hexacosane	0.125	0.0962	77	0.125	0.0926	74	60-130

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

January 30, 2023

Rosalynn Dang
 Eurofins Eaton Analytical
 750 Royal Oaks Drive
 Suite 100
 Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-33504-1
 Physis Project ID: 1407003-359

Dear Rosalynn,


Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 1/9/2023. 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: 1407003-359

RED-HILL Project # 38001111 Job # 380-33504-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
103181	HALAWA WELLS UNITS 1 & 2	380-33504-1	1/5/2023	10:00	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.

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.

ANALYTICALS

REPORT

TERRA AURA
ENVIRONMENTAL LABORATORIES, INC.

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 103181-R1 HALAWA WELLS UNITS 1 & 2 380-3 Matrix: Samplewater Sampled: 05-Jan-23 10:00 Received: 09-Jan-23											
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40096	09-Jan-23	26-Jan-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 103181-R1	HALAWA WELLS UNITS 1 & 2 380-3 Matrix: Samplewater						Sampled:	05-Jan-23 10:00	Received:	09-Jan-23	
(d10-Acenaphthene)	EPA 625.1	% Recovery	124	1			Total		O-40096	09-Jan-23	26-Jan-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	128	1			Total		O-40096	09-Jan-23	26-Jan-23
(d12-Chrysene)	EPA 625.1	% Recovery	108	1			Total		O-40096	09-Jan-23	26-Jan-23
(d12-Perylene)	EPA 625.1	% Recovery	104	1			Total		O-40096	09-Jan-23	26-Jan-23
(d8-Naphthalene)	EPA 625.1	% Recovery	121	1			Total		O-40096	09-Jan-23	26-Jan-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	09-Jan-23	26-Jan-23



QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC.

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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: 103180-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-40096			Prepared: 09-Jan-23		Analyzed: 25-Jan-23			
Disalicylideneprapanediamin	Total	ND	1	0.05	0.1	µg/L							
Sample ID: 103180-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-40096			Prepared: 09-Jan-23		Analyzed: 25-Jan-23			
Disalicylideneprapanediamin	Total	39.7	1	0.05	0.1	µg/L	50	0	79	50 - 150%	PASS		
Sample ID: 103180-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-40096			Prepared: 09-Jan-23		Analyzed: 25-Jan-23			
Disalicylideneprapanediamin	Total	46	1	0.05	0.1	µg/L	50	0	92	50 - 150%	PASS	15	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: 103180-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
		Method: EPA 625.1				Batch ID: O-40096	Prepared: 09-Jan-23		Analyzed: 25-Jan-23		
(d10-Acenaphthene)	Total	64	1			% Recovery	100	64	27 - 133%	PASS	
(d10-Phenanthrene)	Total	67	1			% Recovery	100	67	43 - 129%	PASS	
(d12-Chrysene)	Total	54	1			% Recovery	100	54	52 - 144%	PASS	
(d12-Perylene)	Total	51	1			% Recovery	100	51	36 - 161%	PASS	
(d8-Naphthalene)	Total	61	1			% Recovery	100	61	25 - 125%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005						µg/L
1-Methylphenanthrene	Total	ND	1	0.001	0.005						µg/L
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005						µg/L
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005						µg/L
2-Methylnaphthalene	Total	ND	1	0.001	0.005						µg/L
Acenaphthene	Total	ND	1	0.001	0.005						µg/L
Acenaphthylene	Total	ND	1	0.001	0.005						µg/L
Anthracene	Total	ND	1	0.001	0.005						µg/L
Benz[a]anthracene	Total	ND	1	0.001	0.005						µg/L
Benzo[a]pyrene	Total	ND	1	0.001	0.005						µg/L
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005						µg/L
Benzo[e]pyrene	Total	ND	1	0.001	0.005						µg/L
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005						µg/L
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005						µg/L
Biphenyl	Total	ND	1	0.001	0.005						µg/L
Chrysene	Total	ND	1	0.001	0.005						µg/L
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005						µg/L
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005						µg/L
Dibenzothiophene	Total	ND	1	0.001	0.005						µg/L

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA 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 CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 103180-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-40096			Prepared: 09-Jan-23		Analyzed: 25-Jan-23					
(d10-Acenaphthene)	Total	62	1			% Recovery	100	0	62	27 - 133%	PASS	
(d10-Phenanthrene)	Total	63	1			% Recovery	100	0	63	43 - 129%	PASS	
(d12-Chrysene)	Total	54	1			% Recovery	100	0	54	52 - 144%	PASS	
(d12-Perylene)	Total	52	1			% Recovery	100	0	52	36 - 161%	PASS	
(d8-Naphthalene)	Total	58	1			% Recovery	100	0	58	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.636	1	0.001	0.005	µg/L	0.5	0	127	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.549	1	0.001	0.005	µg/L	0.5	0	110	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.651	1	0.001	0.005	µg/L	1	0	65	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.598	1	0.001	0.005	µg/L	0.5	0	120	48 - 120%	PASS	
2-Methylnaphthalene	Total	1.95	1	0.001	0.005	µg/L	1.5	0	130	47 - 130%	PASS	
Acenaphthene	Total	1.96	1	0.001	0.005	µg/L	1.5	0	131	53 - 131%	PASS	
Acenaphthylene	Total	2.04	1	0.001	0.005	µg/L	1.5	0	136	43 - 140%	PASS	
Anthracene	Total	2.01	1	0.001	0.005	µg/L	1.5	0	134	58 - 135%	PASS	
Benz[a]anthracene	Total	1.62	1	0.001	0.005	µg/L	1.5	0	108	55 - 145%	PASS	
Benzo[a]pyrene	Total	1.6	1	0.001	0.005	µg/L	1.5	0	107	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	1.74	1	0.001	0.005	µg/L	1.5	0	116	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.505	1	0.001	0.005	µg/L	0.5	0	101	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	1.71	1	0.001	0.005	µg/L	1.5	0	114	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	1.7	1	0.001	0.005	µg/L	1.5	0	113	56 - 145%	PASS	
Biphenyl	Total	0.693	1	0.001	0.005	µg/L	1	0	69	56 - 119%	PASS	
Chrysene	Total	1.61	1	0.001	0.005	µg/L	1.5	0	107	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	1.88	1	0.001	0.005	µg/L	1.5	0	125	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	50 - 150%	PASS	
Dibenzothiophene	Total	0.589	1	0.001	0.005	µg/L	0.5	0	118	46 - 126%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	2.07	1	0.001	0.005	µg/L	1.5	0	138	60 - 146%	PASS		
Fluorene	Total	2.08	1	0.001	0.005	µg/L	2	0	104	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	1.8	1	0.001	0.005	µg/L	1.5	0	120	50 - 151%	PASS		
Naphthalene	Total	1.85	1	0.001	0.005	µg/L	1.5	0	123	41 - 126%	PASS		
Perylene	Total	0.515	1	0.001	0.005	µg/L	0.5	0	103	48 - 141%	PASS		
Phenanthrene	Total	2.05	1	0.001	0.005	µg/L	2	0	102	67 - 127%	PASS		
Pyrene	Total	1.98	1	0.001	0.005	µg/L	1.5	0	132	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: 103180-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:			
		Method: EPA 625.1			Batch ID: O-40096			Prepared: 09-Jan-23			Analyzed: 25-Jan-23			
(d10-Acenaphthene)	Total	59	1			% Recovery	100	0	59	27 - 133%	PASS	5	30	PASS
(d10-Phenanthrene)	Total	62	1			% Recovery	100	0	62	43 - 129%	PASS	2	30	PASS
(d12-Chrysene)	Total	52	1			% Recovery	100	0	52	52 - 144%	PASS	4	30	PASS
(d12-Perylene)	Total	50	1			% Recovery	100	0	50	36 - 161%	PASS	4	30	PASS
(d8-Naphthalene)	Total	54	1			% Recovery	100	0	54	25 - 125%	PASS	7	30	PASS
1-Methylnaphthalene	Total	0.603	1	0.001	0.005	µg/L	0.5	0	121	31 - 128%	PASS	5	30	PASS
1-Methylphenanthrene	Total	0.537	1	0.001	0.005	µg/L	0.5	0	107	66 - 127%	PASS	3	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.603	1	0.001	0.005	µg/L	1	0	60	55 - 122%	PASS	8	30	PASS
2,6-Dimethylnaphthalene	Total	0.589	1	0.001	0.005	µg/L	0.5	0	118	48 - 120%	PASS	2	30	PASS
2-Methylnaphthalene	Total	1.82	1	0.001	0.005	µg/L	1.5	0	121	47 - 130%	PASS	7	30	PASS
Acenaphthene	Total	1.88	1	0.001	0.005	µg/L	1.5	0	125	53 - 131%	PASS	5	30	PASS
Acenaphthylene	Total	1.95	1	0.001	0.005	µg/L	1.5	0	130	43 - 140%	PASS	5	30	PASS
Anthracene	Total	1.94	1	0.001	0.005	µg/L	1.5	0	129	58 - 135%	PASS	4	30	PASS
Benz[a]anthracene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	55 - 145%	PASS	6	30	PASS
Benzo[a]pyrene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	51 - 143%	PASS	5	30	PASS
Benzo[b]fluoranthene	Total	1.66	1	0.001	0.005	µg/L	1.5	0	111	46 - 165%	PASS	4	30	PASS
Benzo[e]pyrene	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	42 - 152%	PASS	2	30	PASS
Benzo[g,h,i]perylene	Total	1.64	1	0.001	0.005	µg/L	1.5	0	109	63 - 133%	PASS	4	30	PASS
Benzo[k]fluoranthene	Total	1.59	1	0.001	0.005	µg/L	1.5	0	106	56 - 145%	PASS	6	30	PASS
Biphenyl	Total	0.655	1	0.001	0.005	µg/L	1	0	65	56 - 119%	PASS	4	30	PASS
Chrysene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	56 - 141%	PASS	5	30	PASS
Dibenz[a,h]anthracene	Total	1.8	1	0.001	0.005	µg/L	1.5	0	120	55 - 150%	PASS	4	30	PASS
Dibenzo[a,l]pyrene	Total	0.426	1	0.001	0.005	µg/L	0.5	0	85	50 - 150%	PASS	0	30	PASS
Dibenzothiophene	Total	0.566	1	0.001	0.005	µg/L	0.5	0	113	46 - 126%	PASS	4	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	2.05	1	0.001	0.005	µg/L	1.5	0	137	60 - 146%	PASS	1	30	PASS
Fluorene	Total	1.99	1	0.001	0.005	µg/L	2	0	100	58 - 131%	PASS	4	30	PASS
Indeno[1,2,3-cd]pyrene	Total	1.76	1	0.001	0.005	µg/L	1.5	0	117	50 - 151%	PASS	3	30	PASS
Naphthalene	Total	1.72	1	0.001	0.005	µg/L	1.5	0	115	41 - 126%	PASS	7	30	PASS
Perylene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	48 - 141%	PASS	3	30	PASS
Phenanthrene	Total	1.98	1	0.001	0.005	µg/L	2	0	99	67 - 127%	PASS	3	30	PASS
Pyrene	Total	1.95	1	0.001	0.005	µg/L	1.5	0	130	54 - 156%	PASS	2	30	PASS

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PHYSIS

TENTATIVELY

IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 103181

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
36.3240	4.2916	1111	Anthracene-D10-	1719-06-8	93
57.7601	2.4549	636	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	98
10.9438	2.2530	583	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	91
10.2770	1.5938	413	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	88
10.7381	1.0874	282	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	94
32.9837	0.8382	217	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
10.6752	0.8228	213	Pyrrolidine	123-75-1	92
10.5674	0.5502	142	2-Methylbutanoic anhydride	1468-39-9	88
11.2965	0.4501	117	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	93

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank Batch O-40096

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
35.9035	2.7768	1111	Anthracene-D10-	1719-06-8	97
57.7615	2.4778	991	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	98
10.9448	2.3970	959	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	90
10.9448	2.3566	943	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	93
10.2785	1.8490	740	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	90
10.6786	0.9186	368	Octane, 3-methyl-6-methylene-	74630-07-2	84
10.7392	0.9151	366	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	93
10.5684	0.8450	338	Hydroperoxide, 1-ethylbutyl	24254-56-6	80
11.2969	0.5527	221	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	94
32.9882	0.5016	201	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
11.2967	0.4919	197	Oxalic acid, cyclohexyl butyl ester	1000309-30-5	92
10.6917	0.4867	195	5-Oxotetrahydrofuran-2-carboxylic acid	4344-84-7	82
10.4937	0.3623	145	2,3,3-Trimethyl-1-hexene	1000113-52-1	89
11.3375	0.3297	132	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	94
10.0303	0.2414	97	Ethanol, 2-butoxy-	111-76-2	96

Concentration estimated using the response for Anthracene-d10

PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Monrovia, CA (Suite 100)
750 Royal Oaks Drive Suite 100
Monrovia, CA 91076
Phone: 626-386-1100

Chain of Custody Record



Client Information (Sub Contract Lab) Client Contact: [Blank] Shipping/Receiving: [Blank] Company: Physis Environmental Laboratories Address: 1904 Wright Circle, City: Anaheim State, Zip: CA, 92806 Phone: [Blank] Email: [Blank] Project Name: RED-HILL Site: Honolulu BWS Sites				Sampler: [Blank] Phone: [Blank] Lab Pk: Arada, Rachelle E-Mail: Rachelle.Arada@eurofins.com Accreditations Required (See note): State - Hawaii		Carrier Tracking No.(#): [Blank] State of Origin: Hawaii		COC No.: 380-32819-1 Page: Page 1 of 1 Job #: 380-33504-1	
Date Date Requested: 1/20/2023 TAT Requested (days): [Blank]				Analysis Requested <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No) SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs				Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Another H - Acetic Acid I - Ice J - DI Water K - EDTA L - EDTA Other: [Blank] M - Hexane N - None O - Acen02 P - Na2OHS 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) HALAWA WELLS UNITS 1 & 2 (380-33504-1)		Sample Date: 1/5/23 Sample Time: 10:00 Sample Type: (C=Comp, G=grab) Preservation Code: Water		Matrix: (Mercur, Snodk, Oxidation, Anab) Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/> SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs		Total Number of containers: 2 See Attached Instructions			
Note: Since laboratory accreditations are subject to change, Eurofins Edison Analytical, LLC places the ownership of method, analysis & accreditation compliances upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/method being analyzed, the samples must be shipped back to the Eurofins Edison Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Edison Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliances to Eurofins Edison Analytical, LLC.									
Possible Hazard Identification Unconfirmed: _____ Deliverable Requested: I, II, III, IV, Other (specify): _____ Primary Deliverable Rank: 2 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months									
Empty Kit Relinquished by: [Blank] Relinquished by: [Signature] Date/Time: 1/19/23 13:20 Company: [Blank]		Date: [Blank] Time: [Blank]		Received by: [Signature] Date/Time: 1/19/23 12:20 Company: PNY 5175		Method of Shipment: [Blank]			
Relinquished by: [Blank] Date/Time: [Blank] Company: [Blank]				Received by: [Blank] Date/Time: [Blank] Company: [Blank]					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: [Blank]		Cooler Temperature(s) °C and Other Remarks: [Blank]					

Project Iteration ID: 1407003-359
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-33504-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: yl
2. Date Received: 1/9/23
3. Time Received: 1220
4. Client Name: EUROFINS
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 5.8 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: R6H

Sample Integrity Upon Receipt:

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

Notes:

Monrovia, CA (Suite 100)

750 Royal Oaks Drive Suite 100
 Monrovia, CA 91016
 Phone: 628-386-1100

Chain of Custody Record



Client Information		Sampler: <u>RYAN GREER</u>		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-9770-2757.2					
Client Contact: Dr. Ron Fenstermacher		Phone: <u>808 748 5840</u>		E-Mail: Rachele.Arada@et.eurofinsus.com		State of Origin:		Page: Page 2 of 3					
Company: City & County of Honolulu		PWSID:		Analysis Requested						Job #:			
Address: 630 South Baretania Street Chemistry Lab		Due Date Requested:		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil 525.2_PREC - (MOD) 525plus Plus TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 537.1_DW_PREC - 537.1 Full List 533 - All Analytes						Preservation Codes:			
City: Honolulu		TAT Requested (days):								A - HCL		M - Hexane	
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No								B - NaOH		N - None	
Phone: 808-748-5091(Tel)		PO #: C20525101 exp 05312023								C - Zn Acetate		O - AsNgO2	
Email: RFENSTEMACHER@hbws.org		WO #:								D - Nitric Acid		P - Na2O4S	
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111		E - NaHSO4		Q - Na2SO3		R - Na2S2O3					
Site: Hawaii		SSOW#:		F - MeOH		S - H2SO4		T - TSP Dodecahydrate					
				G - Amchlor		U - Acetone		V - MCAA					
				H - Ascorbic Acid		W - pH 4-5		Y - Tizma					
				I - Ice		Z - other (specify)		Other:					
				J - DI Water									
				K - EDTA									
				L - EDA									
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=wastelol, BT=Tissue, A=Air)		Special Instructions/Note:			
HALAWA WELLS UNITS 1&2		1/5/23		1000		G		Water					
MOANALUA WELLS								Water					
AIEA GULCH WELLS PUMP 2								Water					
AIEA WELLS PUMPS 1&2 (260)								Water					
HALAWA WELLS UNITS 1&2								Water					
TB MOANALUA WELLS								Water					
TB AIEA GULCH WELLS PUMP2								Water					
TB AIEA WELLS PUMPS 1&2 (260)								Water					
TB HALAWA WELLS UNITS 1&2		1/5/23		1000		G		Water					
MOANALUA WELLS								Water					
AIEA GULCH WELLS PUMP 2								Water					
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment: FedEx: 770915885 7774							
Relinquished by: [Redacted]		Date/Time: 1/5/23 1300		Company: HBWS		Received by: Mark Uccitelli		Date/Time: 1/6/23 950		Company: EEA			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: (752A) 2.6 / 2.5 gel - frozen									

Monrovia, CA (Suite 100)

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

Chain of Custody Record



Client Information		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:	
Client Contact: Dr. Ron Fenstermacher		Phone:	Arada, Rachele		380-9770-2757.1	
Company: City & County of Honolulu		PWSID:	E-Mail: Rachele.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 3	
Address: 630 South Beretania Street Chemistry Lab		Analysis Requested			Job #:	
City: Honolulu					SUBCONTRACT - 625 PAM Physics LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil 625.2_PREC - (MOD) 625plus Plus TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 637.1_DW_PREC - 637.1 Full List 633 - All Analytes	
State, Zip: HI, 96843		Due Date Requested:	Field Filtered Sample (Yes or No)			
Phone: 808-748-5091(Tel)		TAT Requested (days):				
Email: RFENSTERMACHER@hbws.org		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No	Special Instructions/Note:			
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill		PO #: C20525101 exp 05312023				
Site: Hawaii		WO #:	Preservation Code:			
		Project #: 38001111				
		SSOW#:	R R RA RA Y N			
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste oil, BT=TBSP, AA=All)		
MOANALUA WELLS				Water		
AIEA GULCH WELLS PUMP 2				Water		
AIEA WELLS PUMPS 1&2 (260)				Water		
HALAWA WELLS UNITS 1&2				Water		
MOANALUA WELLS				Water		
AIEA GULCH WELLS PUMP 2				Water		
AIEA WELLS PUMPS 1&2 (260)				Water		
HALAWA WELLS UNITS 1&2				Water		
MOANALUA WELLS				Water		
AIEA GULCH WELLS PUMP 2				Water		
AIEA WELLS PUMPS 1&2 (260)				Water		
Possible Hazard Identification			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological			<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Deliverable Requested: I, II, III, IV, Other (specify)			Special Instructions/QC Requirements:			
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:				

Ver: 06/08/2021

Monrovia, CA (Suite 100)

750 Royal Oaks Drive Suite 100

Monrovia, CA 91016

Phone: 626-386-1100

Chain of Custody Record



Client Information			Sampler:		Lab PM: Arada, Rachelle			Carrier Tracking No(s):			COC No: 380-9770-2757.3														
Client Contact: Dr. Ron Fenstermacher			Phone:		E-Mail: Rachelle.Arada@et.eurofinsus.com			State of Origin:			Page: Page 3 of 3														
Company: City & County of Honolulu			PWSID:		Analysis Requested										Job #:										
Address: 630 South Beretania Street Chemistry Lab			Due Date Requested:		<table border="1"> <tr><td>Field Filtered Sample (Yes or No)</td></tr> <tr><td>Subcontract - 625 PAH Physis LL (EAL) + TICs</td></tr> <tr><td>Subcontract - 8015 Gas (Purgeable) LL (EAL)</td></tr> <tr><td>Subcontract - 8015 Diesel LL (EAL) and Motor Oil</td></tr> <tr><td>525.2_PREC - (MOD) 525plus Plus TICs</td></tr> <tr><td>Subcontract - 8015 Gas (Purgeable) LL (EAL)</td></tr> <tr><td>537.1_DW_PREC - 537.1 Full List</td></tr> <tr><td>533 - All Analyses</td></tr> </table>										Field Filtered Sample (Yes or No)	Subcontract - 625 PAH Physis LL (EAL) + TICs	Subcontract - 8015 Gas (Purgeable) LL (EAL)	Subcontract - 8015 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus Plus TICs	Subcontract - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analyses	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)		
Field Filtered Sample (Yes or No)																									
Subcontract - 625 PAH Physis LL (EAL) + TICs																									
Subcontract - 8015 Gas (Purgeable) LL (EAL)																									
Subcontract - 8015 Diesel LL (EAL) and Motor Oil																									
525.2_PREC - (MOD) 525plus Plus TICs																									
Subcontract - 8015 Gas (Purgeable) LL (EAL)																									
537.1_DW_PREC - 537.1 Full List																									
533 - All Analyses																									
City: Honolulu			TAT Requested (days):		Other:																				
State, Zip: HI, 96843			Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No																						
Phone: 808-748-5091(Tel)			PO #: C20525101 exp 05312023																						
Email: RFENSTEMACHER@hbws.org			WO #:																						
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill			Project #: 38001111																						
Site: Hawaii			SSOW#:																						
Sample Identification			Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil/sed, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Subcontract - 625 PAH Physis LL (EAL) + TICs	Subcontract - 8015 Gas (Purgeable) LL (EAL)	Subcontract - 8015 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus Plus TICs	Subcontract - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analyses	Total Number of Containers	Special Instructions/Note:									
								R	R	RA	RA	Y	N												
AIEA WELLS PUMPS 1&2 (260)						Water																			
HALAWA WELLS UNITS 1&2						Water																			
FB: MOANALUA WELLS						Water																			
FB: AIEA GULCH WELLS PUMP 2						Water																			
FB: AIEA WELLS PUMPS 1&2 (260)						Water																			
FB: HALAWA WELLS UNITS 1&2						Water																			
Possible Hazard Identification			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																						
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological			<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																						
Deliverable Requested: I, II, III, IV, Other (specify)			Special Instructions/QC Requirements:																						
Empty Kit Relinquished by:			Date:			Time:			Method of Shipment:																
Relinquished by:			Date/Time:			Company			Received by:			Date/Time:			Company										
Relinquished by:			Date/Time:			Company			Received by:			Date/Time:			Company										
Relinquished by:			Date/Time:			Company			Received by:			Date/Time:			Company										
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:																			

Ver: 06/08/2021



Environment Testing

Shipping Order Form - Bottle Order



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

Shipping Order ID: 9770

Ship Via: FedEx
When To Ship: 1/ 2/2023

Due On: 1/2/2023 11:59:00PM
Due After: 1/2/2023 12:00:00 AM

Ship To Information

Project Manager: Rachelle Arada
Tel: (626) 386-1106 Em: Rachelle.Arada@et.eurofinsus.com
Company Name: City & County of Honolulu
Attention: Erwin Kawata
Address 1: 630 South Beretania Street
Address 2: Public Service Bldg. Room 308
Address 3:
City: Honolulu
State: HI
Zip: 96843
Phone #: +1-808-748-5841
Project Ref: RED-HILL
Event Desc: RUSH Weekly Red Hill

Notes to Bottle/Shipping Department

Pack with Gel Ice.

Please pack as one cooler per site.

Label the cooler under the left hand handle with the ID of the samples that are in the cooler (If more than 1 cooler is used per 1 sample ID label cooler with "sample ID x of y").

Pack by sample ID on the botte labels (with one full set of tests per sample ID).

Send only medium to large coolers.

Shipping Method: Individual sample per cooler (affixed TALS labels)

- Ready to Fill
Preprinted COC-
Number of COC Copies
Seals on Bottle
Seals on Coolers
Priority
Return Shipment Labels
Prepaid Return
Monrovia, CA (Suite 100)
Short Hold Times
Temperature Control
Rush

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

Bottle Order Information

Bottle Order: RUSH RED-HILL WEEKLY
Bottle Order #: 2757
Request From Client: 7/20/2022
Date Order Posted: 7/20/2022 11:12:54AM
Order Status: Ready To Process
Prepared By: Davis Haley
Deliver By Date: 1/2/2023 11:59:00PM
Lab Project Number: 38001111
PWSID:

Order Completion Information

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

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
4	2	8	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH	
4	4	16	Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
4	2	8	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
4	2	8	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal		
4	2	8	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		
4	3	12	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - 537.1 Full List	Water	Normal		
4	3	12	Plastic 250ml - Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Water	Normal		
4	1	4	Plastic 250ml - Reagent Water	None		Water	Field Blank		
4	1	4	Plastic 250ml - Ammonium Acetate	Ammonium Acetate		Water	Field Blank		
4	1	4	Plastic 250ml - Reagent Water	None		Water	Field Blank		
4	1	4	Plastic 250ml - Trizma	Trizma		Water	Field Blank		

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Total Bottle Summary		
Bottle Type Description	Preservative	Bottle Count
Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	8
Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	8
Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	8
Plastic 250ml - Reagent Water	None	8
Plastic 250ml - Trizma	Trizma	16
Plastic 250ml - Ammonium Acetate	Ammonium Acetate	16
VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	8
Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	16
Total Bottles:		88

Notes to Field Staff:



Scan QR code for field sampler instructions

SAMPLER FOLLOW 2 STAGE FIELD PRESERVATION FOR 8015 and 525.2

Health and Safety Notes:

Preservative	Comment
Ammonium Acetate	Caution! May cause eye, skin, and respiratory tract irritation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
Sodium Sulfite w/HCl	CAUTION! CONTAINS SODIUM SULFITE. Harmful if inhaled. Use adequate ventilation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
Sodium Thiosulfate	CAUTION! CONTAINS 10% SODIUM THIOSULFATE. Harmful if inhaled. Use adequate ventilation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
Sodium Thiosulfate/Hydrochloric Acid	CAUTION! CONTAINS 10% SODIUM THIOSULFATE. Harmful if inhaled. Use adequate ventilation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water. Contains 13.3% Monochloroacetic Acid. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water. CAUTION! CONTAINS 1:1 HYDROCHLORIC ACID. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
Trizma	CAUTION! May cause eye, skin, and respiratory tract irritation

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

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-33504-1

Login Number: 33504
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Drinking Water Testing Pomona

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