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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Erwin Kawata  
City & County of Honolulu  
630 South Beretania Street  
Public Service Bldg. Room 310  
Honolulu, Hawaii 96843

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## JOB DESCRIPTION

RED-HILL  
RUSH Weekly Red Hill

## JOB NUMBER

380-54871-1

# Eurofins Eaton Analytical Pomona

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

## Compliance Statement

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

## Authorization



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Authorized for release by  
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# Definitions/Glossary

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

Job ID: 380-54871-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS Semi VOA TICs

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

### Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

## Glossary

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

# Case Narrative

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

Job ID: 380-54871-1

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## Job ID: 380-54871-1

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### Laboratory: Eurofins Eaton Analytical Pomona

#### Narrative

#### Job Narrative 380-54871-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 7/14/2023 10:20 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 4.1° C.

#### GC/MS Semi VOA

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

#### Subcontract non-Sister

See attached subcontract report.

#### Organic Prep

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

#### Subcontract Work

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

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



# Detection Summary

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

Job ID: 380-54871-1

**Client Sample ID: MOANALUA WELLS (331-223-TP202)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-54871-1**

No Detections.

**Client Sample ID: FB MOANALUA WELLS (331-223-TP202)**

**Lab Sample ID: 380-54871-2**

No Detections.

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This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 380-54871-1

**Client Sample ID: MOANALUA WELLS (331-223-TP202)**

**Lab Sample ID: 380-54871-1**

Date Collected: 07/12/23 09:30

Matrix: Drinking Water

Date Received: 07/14/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
2,4'-DDD	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
2,4'-DDE	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
2,4'-DDT	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
2,4-Dinitrotoluene	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
2,6-Dinitrotoluene	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
2-Methylnaphthalene	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
4,4'-DDD	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
4,4'-DDE	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
4,4'-DDT	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Acenaphthene	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Acenaphthylene	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Acetochlor	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Alachlor	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
alpha-BHC	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
alpha-Chlordane	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Anthracene	<0.019		0.019	ug/L		07/17/23 10:30	07/18/23 17:56	1
Atrazine	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Benz(a)anthracene	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Benzo[a]pyrene	<0.019		0.019	ug/L		07/17/23 10:30	07/18/23 17:56	1
Benzo[b]fluoranthene	<0.019		0.019	ug/L		07/17/23 10:30	07/18/23 17:56	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Benzo[k]fluoranthene	<0.019		0.019	ug/L		07/17/23 10:30	07/18/23 17:56	1
beta-BHC	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58	ug/L		07/17/23 10:30	07/18/23 17:56	1
Bromacil	<0.097	^3+	0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Butachlor	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Butylbenzylphthalate	<0.49		0.49	ug/L		07/17/23 10:30	07/18/23 17:56	1
Chlorobenzilate	<0.097	^3+	0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Chloroneb	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Chlorpyrifos	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Chrysene	<0.019		0.019	ug/L		07/17/23 10:30	07/18/23 17:56	1
delta-BHC	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Di(2-ethylhexyl)adipate	<0.58	^3+	0.58	ug/L		07/17/23 10:30	07/18/23 17:56	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Diclorvos (DDVP)	<0.049	^3+	0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Dieldrin	<0.19		0.19	ug/L		07/17/23 10:30	07/18/23 17:56	1
Diethylphthalate	<0.49		0.49	ug/L		07/17/23 10:30	07/18/23 17:56	1
Dimethylphthalate	<0.49		0.49	ug/L		07/17/23 10:30	07/18/23 17:56	1
Di-n-butyl phthalate	<0.97		0.97	ug/L		07/17/23 10:30	07/18/23 17:56	1
Di-n-octyl phthalate	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Endosulfan I (Alpha)	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Endosulfan II (Beta)	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Endosulfan sulfate	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Endrin	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Endrin aldehyde	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
EPTC	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Fluoranthene	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1

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# Client Sample Results

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

Job ID: 380-54871-1

**Client Sample ID: MOANALUA WELLS (331-223-TP202)**

**Lab Sample ID: 380-54871-1**

**Date Collected: 07/12/23 09:30**

**Matrix: Drinking Water**

**Date Received: 07/14/23 10:20**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
gamma-Chlordane	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Heptachlor	<0.039		0.039	ug/L		07/17/23 10:30	07/18/23 17:56	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Hexachlorobenzene	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Isophorone	<0.49		0.49	ug/L		07/17/23 10:30	07/18/23 17:56	1
Lindane	<0.039		0.039	ug/L		07/17/23 10:30	07/18/23 17:56	1
Malathion	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Methoxychlor	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Metolachlor	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Molinate	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Naphthalene	<0.29		0.29	ug/L		07/17/23 10:30	07/18/23 17:56	1
Parathion	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Pendimethalin (Penoxaline)	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Phenanthrene	<0.039		0.039	ug/L		07/17/23 10:30	07/18/23 17:56	1
Propachlor	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Pyrene	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Simazine	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Terbacil	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Terbutylazine	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1
Thiobencarb	<0.19		0.19	ug/L		07/17/23 10:30	07/18/23 17:56	1
Total Permethrin (mixed isomers)	<0.19		0.19	ug/L		07/17/23 10:30	07/18/23 17:56	1
trans-Nonachlor	<0.049		0.049	ug/L		07/17/23 10:30	07/18/23 17:56	1
Trifluralin	<0.097		0.097	ug/L		07/17/23 10:30	07/18/23 17:56	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
<i>Phthalic acid, hept-4-yl undecyl ester</i>	0.54	T J N	ug/L		14.23	1000356-79-2	07/17/23 10:30	07/18/23 17:56	1
<i>tri(2-Ethylhexyl) trimellitate</i>	1.8	T J N	ug/L		14.94	3319-31-1	07/17/23 10:30	07/18/23 17:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>2-Nitro-m-xylene</i>	96		70 - 130	07/17/23 10:30	07/18/23 17:56	1
<i>Perylene-d12</i>	93		70 - 130	07/17/23 10:30	07/18/23 17:56	1
<i>Triphenylphosphate</i>	106		70 - 130	07/17/23 10:30	07/18/23 17:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Acenaphthene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Acenaphthylene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Anthracene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1

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# Client Sample Results

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

Job ID: 380-54871-1

**Client Sample ID: MOANALUA WELLS (331-223-TP202)**

**Lab Sample ID: 380-54871-1**

Date Collected: 07/12/23 09:30

Matrix: Drinking Water

Date Received: 07/14/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[e]pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Biphenyl	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Chrysene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Dibenzothiophene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		07/17/23 00:00	07/30/23 21:27	1
Fluoranthene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Fluorene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Naphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Perylene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Phenanthrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1
Pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 21:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	57		27 - 133	07/17/23 00:00	07/30/23 21:27	1
(d10-Phenanthrene)	91		43 - 129	07/17/23 00:00	07/30/23 21:27	1
(d12-Chrysene)	107		52 - 144	07/17/23 00:00	07/30/23 21:27	1
(d12-Perylene)	81		36 - 161	07/17/23 00:00	07/30/23 21:27	1
(d8-Naphthalene)	57		25 - 125	07/17/23 00:00	07/30/23 21:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			07/17/23 21:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	81		60 - 140		07/17/23 21:07	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			07/22/23 00:49	1
JP5	ND	U	0.056		mg/L			07/22/23 00:49	1
JP8	ND	U	0.056		mg/L			07/22/23 00:49	1
MOTOR OIL	ND	U	0.056		mg/L			07/22/23 00:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	68		60 - 130		07/22/23 00:49	1
HEXACOSANE	97		60 - 130		07/22/23 00:49	1

**Client Sample ID: FB MOANALUA WELLS (331-223-TP202)**

**Lab Sample ID: 380-54871-2**

Date Collected: 07/12/23 09:30

Matrix: Water

Date Received: 07/14/23 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			07/17/23 21:44	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-54871-1

**Client Sample ID: FB MOANALUA WELLS (331-223-TP202)**

**Lab Sample ID: 380-54871-2**

**Date Collected: 07/12/23 09:30**

**Matrix: Water**

**Date Received: 07/14/23 10:20**

<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		07/17/23 21:44	1

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

# Action Limit Summary

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

Job ID: 380-54871-1

**Client Sample ID: MOANALUA WELLS (331-223-TP202)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-54871-1**

## 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		Prep Type
				Limit	RL Method	
Alachlor	<0.049		ug/L	2	0.049 525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049 525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019 525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58 525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58	^3+	ug/L	400	0.58 525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097 525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039 525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049 525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049 525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049 525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039 525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097 525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049 525.2	Total/NA

# Surrogate Summary

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

Job ID: 380-54871-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-54871-1	MOANALUA WELLS (331-223-T	96	93	106

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-54798-B-1-A DU	Duplicate	100	81	107
380-54729-AZ-1-A MS	Matrix Spike	96	96	109
LCS 380-47577/3-A	Lab Control Sample	98	86	97
LCS 380-47577/4-A	Lab Control Sample Dup	99	86	88
MB 380-47577/1-A	Method Blank	96	92	104
MRL 380-47577/2-A	Lab Control Sample	98	93	101

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

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

Matrix: BlankMatrix

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
108348-B1	Method Blank	65	102	107	66	85
108348-BS1	Lab Control Sample	58	80	96	60	79
108348-BS2	Lab Control Sample Dup	68	92	107	69	88

**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)
380-54871-1	MOANALUA WELLS (331-223-T	57	91	107	57	81

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

# Surrogate Summary

Client: City & County of Honolulu

Job ID: 380-54871-1

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)
380-54871-1	MOANALUA WELLS (331-223-T	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
23VG39G08B	Method Blank	

#### Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)
23VG39G08C	LCD	107
23VG39G08L	Lab Control Sample	109

#### 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)
380-54871-2	FB MOANALUA WELLS (331-223-T	81

#### 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)
380-54871-1	MOANALUA WELLS (331-223-T	68	97

#### Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

# Surrogate Summary

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

Job ID: 380-54871-1

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

**Matrix: WATER**

**Prep Type: Total/NA**

**Percent Surrogate Recovery (Acceptance Limits)**

BB    XACOSAI

Lab Sample ID	Client Sample ID
23DSG024WB	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)**

BB    XACOSAI  
 (60-130)    (60-130)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
23DSG024WC	LCD	73	98
23DSG024WL	Lab Control Sample	68	91
23J5G024WC	LCD	81	90
23J5G024WL	Lab Control Sample	75	88
23J8G024WC	LCD	96	90
23J8G024WL	Lab Control Sample	87	92

**Surrogate Legend**

BB = BROMOBENZENE  
 HEXACOSANE = HEXACOSANE

# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: MB 380-47577/1-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
2,4'-DDD	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
2,4'-DDE	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
2,4'-DDT	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
2-Methylnaphthalene	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
4,4'-DDD	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
4,4'-DDE	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
4,4'-DDT	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Acenaphthene	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Acenaphthylene	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Acetochlor	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Alachlor	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
alpha-BHC	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
alpha-Chlordane	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Anthracene	<0.020		0.020	ug/L		07/17/23 10:30	07/18/23 15:17	1
Atrazine	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Benz(a)anthracene	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Benzo[a]pyrene	<0.020		0.020	ug/L		07/17/23 10:30	07/18/23 15:17	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		07/17/23 10:30	07/18/23 15:17	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		07/17/23 10:30	07/18/23 15:17	1
beta-BHC	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		07/17/23 10:30	07/18/23 15:17	1
Bromacil	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Butachlor	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Butylbenzylphthalate	<0.50		0.50	ug/L		07/17/23 10:30	07/18/23 15:17	1
Chlorobenzilate	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Chloroneb	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Chlorpyrifos	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Chrysene	<0.020		0.020	ug/L		07/17/23 10:30	07/18/23 15:17	1
delta-BHC	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		07/17/23 10:30	07/18/23 15:17	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Dieldrin	<0.20		0.20	ug/L		07/17/23 10:30	07/18/23 15:17	1
Diethylphthalate	<0.50		0.50	ug/L		07/17/23 10:30	07/18/23 15:17	1
Dimethylphthalate	<0.50		0.50	ug/L		07/17/23 10:30	07/18/23 15:17	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		07/17/23 10:30	07/18/23 15:17	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Endosulfan sulfate	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Endrin	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Endrin aldehyde	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
EPTC	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1

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# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: MB 380-47577/1-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Fluorene	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
gamma-Chlordane	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Heptachlor	<0.040		0.040	ug/L		07/17/23 10:30	07/18/23 15:17	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Hexachlorobenzene	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Isophorone	<0.50		0.50	ug/L		07/17/23 10:30	07/18/23 15:17	1
Lindane	<0.040		0.040	ug/L		07/17/23 10:30	07/18/23 15:17	1
Malathion	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Methoxychlor	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Metolachlor	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Molinate	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Naphthalene	<0.30		0.30	ug/L		07/17/23 10:30	07/18/23 15:17	1
Parathion	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Phenanthrene	<0.040		0.040	ug/L		07/17/23 10:30	07/18/23 15:17	1
Propachlor	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Pyrene	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Simazine	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Terbacil	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Terbutylazine	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1
Thiobencarb	<0.20		0.20	ug/L		07/17/23 10:30	07/18/23 15:17	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		07/17/23 10:30	07/18/23 15:17	1
trans-Nonachlor	<0.050		0.050	ug/L		07/17/23 10:30	07/18/23 15:17	1
Trifluralin	<0.099		0.099	ug/L		07/17/23 10:30	07/18/23 15:17	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Decane	2.64	T J N	ug/L		2.36	124-18-5	07/17/23 10:30	07/18/23 15:17	1
Decane, 5-methyl-	0.772	T J N	ug/L		2.52	13151-35-4	07/17/23 10:30	07/18/23 15:17	1
Tetradecanoic acid	0.730	T J N	ug/L		5.77	544-63-8	07/17/23 10:30	07/18/23 15:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	96		70 - 130	07/17/23 10:30	07/18/23 15:17	1
Perylene-d12	92		70 - 130	07/17/23 10:30	07/18/23 15:17	1
Triphenylphosphate	104		70 - 130	07/17/23 10:30	07/18/23 15:17	1

**Lab Sample ID: LCS 380-47577/3-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.98	2.01		ug/L		101	70 - 130
2,4'-DDD	1.98	1.89		ug/L		95	70 - 130
2,4'-DDE	1.98	1.74		ug/L		88	70 - 130
2,4'-DDT	1.98	1.96		ug/L		99	70 - 130
2,4-Dinitrotoluene	1.98	1.47		ug/L		74	70 - 130

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# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: LCS 380-47577/3-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	1.98	1.53		ug/L		77	70 - 130
2-Methylnaphthalene	1.98	2.01		ug/L		101	70 - 130
4,4'-DDD	1.98	2.00		ug/L		101	70 - 130
4,4'-DDE	1.98	1.86		ug/L		94	70 - 130
4,4'-DDT	1.98	1.74		ug/L		88	70 - 130
Acenaphthene	1.98	1.83		ug/L		92	70 - 130
Acenaphthylene	1.98	1.68		ug/L		85	70 - 130
Acetochlor	1.98	2.08		ug/L		105	70 - 130
Alachlor	1.98	1.92		ug/L		97	70 - 130
alpha-BHC	1.98	1.81		ug/L		91	70 - 130
alpha-Chlordane	1.98	1.81		ug/L		92	70 - 130
Anthracene	1.98	1.80		ug/L		91	70 - 130
Atrazine	1.98	2.02		ug/L		102	70 - 130
Benz(a)anthracene	1.98	1.78		ug/L		90	70 - 130
Benzo[a]pyrene	1.98	1.79		ug/L		90	70 - 130
Benzo[b]fluoranthene	1.98	1.90		ug/L		96	70 - 130
Benzo[g,h,i]perylene	1.98	1.68		ug/L		85	70 - 130
Benzo[k]fluoranthene	1.98	1.91		ug/L		96	70 - 130
beta-BHC	1.98	1.75		ug/L		88	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	1.84		ug/L		93	70 - 130
Bromacil	1.98	1.88		ug/L		95	70 - 130
Butachlor	1.98	2.00		ug/L		101	70 - 130
Butylbenzylphthalate	1.98	2.03		ug/L		102	70 - 130
Chlorobenzilate	1.98	2.28		ug/L		115	70 - 130
Chloroneb	1.98	1.86		ug/L		94	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	1.93		ug/L		97	70 - 130
Chlorpyrifos	1.98	1.96		ug/L		99	70 - 130
Chrysene	1.98	2.00		ug/L		101	70 - 130
delta-BHC	1.98	1.69		ug/L		85	70 - 130
Di(2-ethylhexyl)adipate	1.98	1.99		ug/L		101	70 - 130
Dibenz(a,h)anthracene	1.98	1.83		ug/L		92	70 - 130
Diclorvos (DDVP)	1.98	2.33		ug/L		118	70 - 130
Dieldrin	1.98	1.82		ug/L		92	70 - 130
Diethylphthalate	1.98	1.96		ug/L		99	70 - 130
Dimethylphthalate	1.98	1.92		ug/L		97	70 - 130
Di-n-butyl phthalate	3.96	3.89		ug/L		98	70 - 130
Di-n-octyl phthalate	1.98	1.45		ug/L		73	70 - 130
Endosulfan I (Alpha)	1.98	1.71		ug/L		86	70 - 130
Endosulfan II (Beta)	1.98	1.93		ug/L		97	70 - 130
Endosulfan sulfate	1.98	1.83		ug/L		92	70 - 130
Endrin	1.98	2.05		ug/L		104	70 - 130
Endrin aldehyde	1.98	1.95		ug/L		99	70 - 130
EPTC	1.98	1.98		ug/L		100	70 - 130
Fluoranthene	1.98	1.92		ug/L		97	70 - 130
Fluorene	1.98	1.92		ug/L		97	70 - 130
gamma-Chlordane	1.98	1.84		ug/L		93	70 - 130
Heptachlor	1.98	1.74		ug/L		88	70 - 130
Heptachlor epoxide (isomer B)	1.98	1.83		ug/L		92	70 - 130
Hexachlorobenzene	1.98	1.86		ug/L		94	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: LCS 380-47577/3-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorocyclopentadiene	1.98	2.01		ug/L		101	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	1.85		ug/L		93	70 - 130
Isophorone	1.98	2.15		ug/L		108	70 - 130
Lindane	1.98	1.83		ug/L		92	70 - 130
Malathion	1.98	2.15		ug/L		109	70 - 130
Methoxychlor	1.98	1.96		ug/L		99	70 - 130
Metolachlor	1.98	2.13		ug/L		107	70 - 130
Molinate	1.98	1.97		ug/L		100	70 - 130
Naphthalene	1.98	1.85		ug/L		93	70 - 130
Parathion	1.98	1.90		ug/L		96	70 - 130
Pendimethalin (Penoxaline)	1.98	1.85		ug/L		93	70 - 130
Phenanthrene	1.98	1.79		ug/L		90	70 - 130
Propachlor	1.98	1.99		ug/L		100	70 - 130
Pyrene	1.98	1.94		ug/L		98	70 - 130
Simazine	1.98	2.02		ug/L		102	70 - 130
Terbacil	1.98	1.99		ug/L		100	70 - 130
Terbutylazine	1.98	1.99		ug/L		100	70 - 130
Thiobencarb	1.98	2.01		ug/L		101	70 - 130
trans-Nonachlor	1.98	1.81		ug/L		91	70 - 130
Trifluralin	1.98	1.77		ug/L		90	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	86		70 - 130
Triphenylphosphate	97		70 - 130

**Lab Sample ID: LCSD 380-47577/4-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.98	2.09		ug/L		105	70 - 130	4	20
2,4'-DDD	1.98	1.93		ug/L		98	70 - 130	2	20
2,4'-DDE	1.98	1.86		ug/L		94	70 - 130	7	20
2,4'-DDT	1.98	1.92		ug/L		97	70 - 130	2	20
2,4-Dinitrotoluene	1.98	1.58		ug/L		80	70 - 130	7	20
2,6-Dinitrotoluene	1.98	1.61		ug/L		82	70 - 130	6	20
2-Methylnaphthalene	1.98	2.11		ug/L		107	70 - 130	5	20
4,4'-DDD	1.98	1.95		ug/L		98	70 - 130	2	20
4,4'-DDE	1.98	1.98		ug/L		100	70 - 130	6	20
4,4'-DDT	1.98	1.64		ug/L		83	70 - 130	6	20
Acenaphthene	1.98	1.90		ug/L		96	70 - 130	4	20
Acenaphthylene	1.98	1.79		ug/L		91	70 - 130	6	20
Acetochlor	1.98	2.11		ug/L		107	70 - 130	1	20
Alachlor	1.98	1.88		ug/L		95	70 - 130	2	20
alpha-BHC	1.98	1.85		ug/L		94	70 - 130	3	20
alpha-Chlordane	1.98	1.97		ug/L		99	70 - 130	8	20
Anthracene	1.98	1.78		ug/L		90	70 - 130	1	20

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: LCSD 380-47577/4-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Atrazine	1.98	2.00		ug/L		101	70 - 130	1	20	
Benz(a)anthracene	1.98	1.62		ug/L		82	70 - 130	10	20	
Benzo[a]pyrene	1.98	1.86		ug/L		94	70 - 130	4	20	
Benzo[b]fluoranthene	1.98	2.00		ug/L		101	70 - 130	5	20	
Benzo[g,h,i]perylene	1.98	1.75		ug/L		88	70 - 130	4	20	
Benzo[k]fluoranthene	1.98	2.12		ug/L		107	70 - 130	11	20	
beta-BHC	1.98	1.81		ug/L		91	70 - 130	3	20	
Bis(2-ethylhexyl) phthalate	1.98	1.95		ug/L		99	70 - 130	6	20	
Bromacil	1.98	1.82		ug/L		92	70 - 130	3	20	
Butachlor	1.98	2.01		ug/L		101	70 - 130	1	20	
Butylbenzylphthalate	1.98	1.94		ug/L		98	70 - 130	4	20	
Chlorobenzilate	1.98	2.17		ug/L		110	70 - 130	5	20	
Chloroneb	1.98	1.91		ug/L		96	70 - 130	3	20	
Chlorothalonil (Draconil, Bravo)	1.98	1.90		ug/L		96	70 - 130	2	20	
Chlorpyrifos	1.98	1.97		ug/L		99	70 - 130	0	20	
Chrysene	1.98	2.00		ug/L		101	70 - 130	0	20	
delta-BHC	1.98	1.78		ug/L		90	70 - 130	5	20	
Di(2-ethylhexyl)adipate	1.98	2.04		ug/L		103	70 - 130	2	20	
Dibenz(a,h)anthracene	1.98	1.85		ug/L		94	70 - 130	1	20	
Diclorvos (DDVP)	1.98	2.47		ug/L		125	70 - 130	6	20	
Dieldrin	1.98	1.86		ug/L		94	70 - 130	2	20	
Diethylphthalate	1.98	2.03		ug/L		102	70 - 130	3	20	
Dimethylphthalate	1.98	1.98		ug/L		100	70 - 130	3	20	
Di-n-butyl phthalate	3.96	3.87		ug/L		98	70 - 130	1	20	
Di-n-octyl phthalate	1.98	1.60		ug/L		81	70 - 130	10	20	
Endosulfan I (Alpha)	1.98	1.80		ug/L		91	70 - 130	5	20	
Endosulfan II (Beta)	1.98	1.82		ug/L		92	70 - 130	6	20	
Endosulfan sulfate	1.98	1.75		ug/L		89	70 - 130	4	20	
Endrin	1.98	1.94		ug/L		98	70 - 130	6	20	
Endrin aldehyde	1.98	1.83		ug/L		93	70 - 130	6	20	
EPTC	1.98	2.10		ug/L		106	70 - 130	6	20	
Fluoranthene	1.98	1.98		ug/L		100	70 - 130	3	20	
Fluorene	1.98	2.00		ug/L		101	70 - 130	4	20	
gamma-Chlordane	1.98	1.95		ug/L		99	70 - 130	6	20	
Heptachlor	1.98	1.77		ug/L		89	70 - 130	2	20	
Heptachlor epoxide (isomer B)	1.98	1.98		ug/L		100	70 - 130	8	20	
Hexachlorobenzene	1.98	1.93		ug/L		98	70 - 130	4	20	
Hexachlorocyclopentadiene	1.98	2.10		ug/L		106	70 - 130	5	20	
Indeno[1,2,3-cd]pyrene	1.98	1.84		ug/L		93	70 - 130	1	20	
Isophorone	1.98	2.29		ug/L		116	70 - 130	7	20	
Lindane	1.98	1.83		ug/L		92	70 - 130	0	20	
Malathion	1.98	2.14		ug/L		108	70 - 130	1	20	
Methoxychlor	1.98	1.95		ug/L		99	70 - 130	0	20	
Metolachlor	1.98	2.10		ug/L		106	70 - 130	1	20	
Molinate	1.98	2.06		ug/L		104	70 - 130	4	20	
Naphthalene	1.98	1.94		ug/L		98	70 - 130	5	20	
Parathion	1.98	1.90		ug/L		96	70 - 130	0	20	
Pendimethalin (Penoxaline)	1.98	1.91		ug/L		96	70 - 130	3	20	
Phenanthrene	1.98	1.77		ug/L		90	70 - 130	1	20	

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: LCSD 380-47577/4-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Propachlor	1.98	2.04		ug/L		103	70 - 130	3	20
Pyrene	1.98	1.99		ug/L		100	70 - 130	2	20
Simazine	1.98	2.03		ug/L		103	70 - 130	1	20
Terbacil	1.98	1.96		ug/L		99	70 - 130	1	20
Terbutylazine	1.98	2.03		ug/L		102	70 - 130	2	20
Thiobencarb	1.98	2.05		ug/L		104	70 - 130	2	20
trans-Nonachlor	1.98	1.97		ug/L		100	70 - 130	9	20
Trifluralin	1.98	1.85		ug/L		93	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	86		70 - 130
Triphenylphosphate	88		70 - 130

**Lab Sample ID: MRL 380-47577/2-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0994	0.111		ug/L		112	50 - 150
2,4'-DDD	0.0994	0.125		ug/L		126	50 - 150
2,4'-DDE	0.0994	0.102		ug/L		103	50 - 150
2,4'-DDT	0.0994	0.0964	J	ug/L		97	50 - 150
2,4-Dinitrotoluene	0.0994	0.0922	J	ug/L		93	50 - 150
2,6-Dinitrotoluene	0.0994	0.0837	J	ug/L		84	50 - 150
2-Methylnaphthalene	0.0994	0.108		ug/L		108	50 - 150
4,4'-DDD	0.0994	0.0963	J	ug/L		97	50 - 150
4,4'-DDE	0.0994	0.0920	J	ug/L		93	50 - 150
4,4'-DDT	0.0994	0.114		ug/L		114	50 - 150
Acenaphthene	0.0994	0.0932	J	ug/L		94	50 - 150
Acenaphthylene	0.0994	0.0783	J	ug/L		79	50 - 150
Acetochlor	0.0497	0.0460	J	ug/L		93	50 - 150
Alachlor	0.0497	0.0638		ug/L		128	50 - 150
alpha-BHC	0.0994	0.0891	J	ug/L		90	50 - 150
alpha-Chlordane	0.0248	<0.029		ug/L		100	50 - 150
Anthracene	0.0199	<0.019		ug/L		90	50 - 150
Atrazine	0.0497	<0.048		ug/L		95	50 - 150
Benz(a)anthracene	0.0497	0.0439	J	ug/L		88	50 - 150
Benzo[a]pyrene	0.0199	0.0191	J	ug/L		96	50 - 150
Benzo[b]fluoranthene	0.0199	0.0196	J	ug/L		99	50 - 150
Benzo[g,h,i]perylene	0.0497	0.0408	J	ug/L		82	50 - 150
Benzo[k]fluoranthene	0.0199	0.0207		ug/L		104	50 - 150
beta-BHC	0.0994	0.104		ug/L		105	50 - 150
Bis(2-ethylhexyl) phthalate	0.596	0.772		ug/L		130	50 - 150
Bromacil	0.0994	0.157	^3+	ug/L		158	50 - 150
Butachlor	0.0497	0.0556		ug/L		112	50 - 150
Butylbenzylphthalate	0.149	0.159	J	ug/L		107	50 - 150
Chlorobenzilate	0.0994	0.196	^3+	ug/L		197	50 - 150

# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: MRL 380-47577/2-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloroneb	0.0994	0.0857	J	ug/L		86	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0994	0.111		ug/L		112	50 - 150
Chlorpyrifos	0.0497	0.0503		ug/L		101	50 - 150
Chrysene	0.0199	0.0222		ug/L		112	50 - 150
delta-BHC	0.0994	0.106		ug/L		107	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.578	J ^3+	ug/L		194	50 - 150
Dibenz(a,h)anthracene	0.0497	0.0460	J	ug/L		93	50 - 150
Diclorvos (DDVP)	0.0497	0.0786	^3+	ug/L		158	50 - 150
Dieldrin	0.0994	0.104	J	ug/L		104	50 - 150
Diethylphthalate	0.149	0.166	J	ug/L		112	50 - 150
Dimethylphthalate	0.298	0.256	J	ug/L		86	50 - 150
Di-n-butyl phthalate	0.298	0.375	J	ug/L		126	49 - 243
Di-n-octyl phthalate	0.0994	0.111		ug/L		112	50 - 150
Endosulfan I (Alpha)	0.0994	0.106		ug/L		106	50 - 150
Endosulfan II (Beta)	0.0994	0.106		ug/L		107	50 - 150
Endosulfan sulfate	0.0994	0.109		ug/L		109	50 - 150
Endrin	0.0994	0.113		ug/L		114	50 - 150
Endrin aldehyde	0.0994	0.128		ug/L		129	50 - 150
EPTC	0.0994	0.106		ug/L		107	50 - 150
Fluoranthene	0.0497	0.0533	J	ug/L		107	50 - 150
Fluorene	0.0497	<0.050		ug/L		99	50 - 150
gamma-Chlordane	0.0248	0.0257	J	ug/L		103	50 - 150
Heptachlor	0.0397	0.0287	J	ug/L		72	50 - 150
Heptachlor epoxide (isomer B)	0.0497	0.0522		ug/L		105	50 - 150
Hexachlorobenzene	0.0497	0.0444	J	ug/L		89	50 - 150
Hexachlorocyclopentadiene	0.0497	0.0439	J	ug/L		88	50 - 150
Indeno[1,2,3-cd]pyrene	0.0497	0.0441	J	ug/L		89	50 - 150
Isophorone	0.0994	0.109	J	ug/L		110	50 - 150
Lindane	0.0397	0.0446		ug/L		112	50 - 150
Malathion	0.0994	0.100		ug/L		101	50 - 150
Methoxychlor	0.0994	0.0998		ug/L		100	50 - 150
Metolachlor	0.0497	0.0582		ug/L		117	50 - 150
Molinate	0.0994	0.0934	J	ug/L		94	50 - 150
Naphthalene	0.0994	0.122	J	ug/L		123	50 - 150
Parathion	0.0994	0.111		ug/L		111	50 - 150
Pendimethalin (Penoxaline)	0.0994	0.122		ug/L		123	50 - 150
Phenanthrene	0.0199	0.0213	J	ug/L		107	50 - 150
Propachlor	0.0497	0.0519		ug/L		104	50 - 150
Pyrene	0.0497	0.0503		ug/L		101	50 - 150
Simazine	0.0497	0.0519		ug/L		104	50 - 150
Terbacil	0.0994	0.119		ug/L		119	50 - 150
Terbutylazine	0.0994	0.0972	J	ug/L		98	50 - 150
Thiobencarb	0.0994	0.112	J	ug/L		112	50 - 150
trans-Nonachlor	0.0248	<0.026		ug/L		96	50 - 150
Trifluralin	0.0994	0.105		ug/L		105	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	98		70 - 130

# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: MRL 380-47577/2-A**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Surrogate	%Recovery	MRL MRL Qualifier	Limits
Perylene-d12	93		70 - 130
Triphenylphosphate	101		70 - 130

**Lab Sample ID: 380-54729-AZ-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.96	1.99		ug/L		102	70 - 130
2,4'-DDD	<0.098		1.96	2.08		ug/L		106	70 - 130
2,4'-DDE	<0.098		1.96	1.99		ug/L		102	70 - 130
2,4'-DDT	<0.098		1.96	2.17		ug/L		111	70 - 130
2,4-Dinitrotoluene	<0.098		1.96	1.60		ug/L		82	70 - 130
2,6-Dinitrotoluene	<0.098		1.96	1.57		ug/L		80	70 - 130
2-Methylnaphthalene	<0.098		1.96	2.03		ug/L		104	70 - 130
4,4'-DDD	<0.098		1.96	2.19		ug/L		112	70 - 130
4,4'-DDE	<0.098		1.96	2.11		ug/L		108	70 - 130
4,4'-DDT	<0.098		1.96	1.96		ug/L		100	70 - 130
Acenaphthene	<0.098		1.96	1.82		ug/L		93	70 - 130
Acenaphthylene	<0.098		1.96	1.72		ug/L		88	70 - 130
Acetochlor	<0.098		1.96	2.30		ug/L		117	70 - 130
Alachlor	<0.049		1.96	2.06		ug/L		105	70 - 130
alpha-BHC	<0.098		1.96	1.74		ug/L		89	70 - 130
alpha-Chlordane	<0.049		1.96	2.12		ug/L		108	70 - 130
Anthracene	<0.020		1.96	1.80		ug/L		92	70 - 130
Atrazine	<0.049		1.96	2.15		ug/L		109	70 - 130
Benz(a)anthracene	<0.049		1.96	1.88		ug/L		96	70 - 130
Benzo[a]pyrene	<0.020		1.96	1.98		ug/L		101	70 - 130
Benzo[b]fluoranthene	<0.020		1.96	2.07		ug/L		106	70 - 130
Benzo[g,h,i]perylene	<0.049		1.96	2.00		ug/L		102	70 - 130
Benzo[k]fluoranthene	<0.020		1.96	2.13		ug/L		109	70 - 130
beta-BHC	<0.098		1.96	1.91		ug/L		98	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.96	1.94		ug/L		99	70 - 130
Bromacil	<0.098	^3+	1.96	2.12		ug/L		108	70 - 130
Butachlor	<0.049		1.96	2.26		ug/L		115	70 - 130
Butylbenzylphthalate	<0.49		1.96	2.26		ug/L		115	70 - 130
Chlorobenzilate	<0.098	^3+	1.96	2.45		ug/L		125	70 - 130
Chloroneb	<0.098		1.96	1.75		ug/L		89	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.96	2.10		ug/L		107	70 - 130
Chlorpyrifos	<0.049		1.96	2.24		ug/L		114	70 - 130
Chrysene	<0.020		1.96	1.95		ug/L		100	70 - 130
delta-BHC	<0.098		1.96	1.95		ug/L		100	70 - 130
Di(2-ethylhexyl)adipate	<0.59	^3+	1.96	2.12		ug/L		108	70 - 130
Dibenz(a,h)anthracene	<0.049		1.96	2.07		ug/L		105	70 - 130
Diclorvos (DDVP)	<0.049	^3+	1.96	2.41		ug/L		123	70 - 130
Dieldrin	<0.20		1.96	2.00		ug/L		102	70 - 130
Diethylphthalate	<0.49		1.96	1.86		ug/L		95	70 - 130
Dimethylphthalate	<0.49		1.96	1.82		ug/L		93	70 - 130



# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: 380-54798-B-1-A DU**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
2,4'-DDT	<0.098		<0.098		ug/L		NC	20
2,4-Dinitrotoluene	<0.098		<0.098		ug/L		NC	20
2,6-Dinitrotoluene	<0.098		<0.098		ug/L		NC	20
2-Methylnaphthalene	<0.098		<0.098		ug/L		NC	20
4,4'-DDD	<0.098		<0.098		ug/L		NC	20
4,4'-DDE	<0.098		<0.098		ug/L		NC	20
4,4'-DDT	<0.098		<0.098		ug/L		NC	20
Acenaphthene	<0.098		<0.098		ug/L		NC	20
Acenaphthylene	<0.098		<0.098		ug/L		NC	20
Acetochlor	<0.098		<0.098		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.098		<0.098		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.098		<0.098		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.098	^3+	<0.098		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.098	^3+	<0.098		ug/L		NC	20
Chloroneb	<0.098		<0.098		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.098		<0.098		ug/L		NC	20
Chlorpyrifos	<0.049		<0.049		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.098		<0.098		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59	^3+	<0.59		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049	^3+	<0.049		ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.49		<0.49		ug/L		NC	20
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20
Di-n-butyl phthalate	<0.98		<0.98		ug/L		NC	20
Di-n-octyl phthalate	<0.098		<0.098		ug/L		NC	20
Endosulfan I (Alpha)	<0.098		<0.098		ug/L		NC	20
Endosulfan II (Beta)	<0.098		<0.098		ug/L		NC	20
Endosulfan sulfate	<0.098		<0.098		ug/L		NC	20
Endrin	<0.098		<0.098		ug/L		NC	20
Endrin aldehyde	<0.098		<0.098		ug/L		NC	20
EPTC	<0.098		<0.098		ug/L		NC	20
Fluoranthene	<0.098		<0.098		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20
Heptachlor	<0.039		<0.039		ug/L		NC	20

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# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: 380-54798-B-1-A DU**  
**Matrix: Water**  
**Analysis Batch: 47791**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 47577**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Heptachlor epoxide (isomer B)	<0.049		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.049		ug/L		NC	20
Isophorone	<0.49		<0.49		ug/L		NC	20
Lindane	<0.039		<0.039		ug/L		NC	20
Malathion	<0.098		<0.098		ug/L		NC	20
Methoxychlor	<0.098		<0.098		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.098		<0.098		ug/L		NC	20
Naphthalene	<0.29		<0.30		ug/L		NC	20
Parathion	<0.098		<0.098		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.098		<0.098		ug/L		NC	20
Phenanthrene	<0.039		<0.039		ug/L		NC	20
Propachlor	<0.049		<0.049		ug/L		NC	20
Pyrene	<0.049		<0.049		ug/L		NC	20
Simazine	<0.049		<0.049		ug/L		NC	20
Terbacil	<0.098		<0.098		ug/L		NC	20
Terbutylazine	<0.098		<0.098		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.049		ug/L		NC	20
Trifluralin	<0.098		<0.098		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	100		70 - 130
Perylene-d12	81		70 - 130
Triphenylphosphate	107		70 - 130

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

**Lab Sample ID: 108348-B1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-41148**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: O-41148\_P**

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1-Methylnaphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Acenaphthene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Acenaphthylene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Anthracene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1

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# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: 108348-B1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-41148**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: O-41148\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Biphenyl	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Chrysene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Dibenzothiophene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		07/17/23 00:00	07/30/23 12:24	1
Fluoranthene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Fluorene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Naphthalene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Perylene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Phenanthrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1
Pyrene	ND		0.005	0.001	µg/L		07/17/23 00:00	07/30/23 12:24	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	65		27 - 133	07/17/23 00:00	07/30/23 12:24	1
(d10-Phenanthrene)	102		43 - 129	07/17/23 00:00	07/30/23 12:24	1
(d12-Chrysene)	107		52 - 144	07/17/23 00:00	07/30/23 12:24	1
(d12-Perylene)	85		36 - 161	07/17/23 00:00	07/30/23 12:24	1
(d8-Naphthalene)	66		25 - 125	07/17/23 00:00	07/30/23 12:24	1

**Lab Sample ID: 108348-BS1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-41148**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: O-41148\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.352		µg/L		70	31 - 128
1-Methylphenanthrene	0.5	0.505		µg/L		101	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.441		µg/L		88	55 - 122
2,6-Dimethylnaphthalene	0.5	0.394		µg/L		79	48 - 120
2-Methylnaphthalene	0.5	0.396		µg/L		79	47 - 130
Acenaphthene	0.5	0.38		µg/L		76	53 - 131
Acenaphthylene	0.5	0.431		µg/L		86	43 - 140
Anthracene	0.5	0.429		µg/L		86	58 - 135
Benz[a]anthracene	0.5	0.502		µg/L		100	55 - 145
Benzo[a]pyrene	0.5	0.443		µg/L		89	51 - 143
Benzo[b]fluoranthene	0.5	0.484		µg/L		97	46 - 165
Benzo[e]pyrene	0.5	0.464		µg/L		93	42 - 152
Benzo[g,h,i]perylene	0.5	0.466		µg/L		93	63 - 133
Benzo[k]fluoranthene	0.5	0.483		µg/L		97	56 - 145
Biphenyl	0.5	0.456		µg/L		91	56 - 119
Chrysene	0.5	0.476		µg/L		95	56 - 141
Dibenz[a,h]anthracene	0.5	0.454		µg/L		91	55 - 150
Dibenzo[a,l]pyrene	0.5	0.386		µg/L		77	50 - 150
Dibenzothiophene	0.5	0.487		µg/L		97	46 - 126
Disalicylidenepropanediamine	50	28.1		µg/L		56	50 - 150
Fluoranthene	0.5	0.58		µg/L		116	60 - 146

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: 108348-BS1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-41148**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: O-41148\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluorene	0.5	0.421		µg/L		84	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.446		µg/L		89	50 - 151
Naphthalene	0.5	0.356		µg/L		71	41 - 126
Perylene	0.5	0.407		µg/L		81	48 - 141
Phenanthrene	0.5	0.442		µg/L		88	67 - 127
Pyrene	0.5	0.53		µg/L		106	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	58		27 - 133
(d10-Phenanthrene)	80		43 - 129
(d12-Chrysene)	96		52 - 144
(d12-Perylene)	79		36 - 161
(d8-Naphthalene)	60		25 - 125

**Lab Sample ID: 108348-BS2**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-41148**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: O-41148\_P**

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.388		µg/L		78	31 - 128	11	30
1-Methylphenanthrene	0.5	0.546		µg/L		109	66 - 127	8	30
2,3,5-Trimethylnaphthalene	0.5	0.467		µg/L		93	55 - 122	6	30
2,6-Dimethylnaphthalene	0.5	0.424		µg/L		85	48 - 120	7	30
2-Methylnaphthalene	0.5	0.414		µg/L		83	47 - 130	5	30
Acenaphthene	0.5	0.403		µg/L		81	53 - 131	6	30
Acenaphthylene	0.5	0.469		µg/L		94	43 - 140	9	30
Anthracene	0.5	0.469		µg/L		94	58 - 135	9	30
Benz[a]anthracene	0.5	0.541		µg/L		108	55 - 145	8	30
Benzo[a]pyrene	0.5	0.492		µg/L		98	51 - 143	10	30
Benzo[b]fluoranthene	0.5	0.489		µg/L		98	46 - 165	1	30
Benzo[e]pyrene	0.5	0.491		µg/L		98	42 - 152	5	30
Benzo[g,h,i]perylene	0.5	0.493		µg/L		99	63 - 133	6	30
Benzo[k]fluoranthene	0.5	0.496		µg/L		99	56 - 145	2	30
Biphenyl	0.5	0.505		µg/L		101	56 - 119	10	30
Chrysene	0.5	0.507		µg/L		101	56 - 141	6	30
Dibenz[a,h]anthracene	0.5	0.481		µg/L		96	55 - 150	5	30
Dibenzo[a,l]pyrene	0.5	0.401		µg/L		80	50 - 150	4	30
Dibenzothiophene	0.5	0.5		µg/L		100	46 - 126	3	30
Disalicylidenepropanediamine	50	29		µg/L		54	50 - 150	4	30
Fluoranthene	0.5	0.629		µg/L		126	60 - 146	8	30
Fluorene	0.5	0.46		µg/L		92	58 - 131	9	30
Indeno[1,2,3-cd]pyrene	0.5	0.467		µg/L		93	50 - 151	4	30
Naphthalene	0.5	0.398		µg/L		80	41 - 126	12	30
Perylene	0.5	0.447		µg/L		89	48 - 141	9	30
Phenanthrene	0.5	0.464		µg/L		93	67 - 127	6	30
Pyrene	0.5	0.565		µg/L		113	54 - 156	6	30

# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: 108348-BS2**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-41148**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: O-41148\_P**

Surrogate	LCS DUP %Recovery	LCS DUP Qualifier	Limits
(d10-Acenaphthene)	68		27 - 133
(d10-Phenanthrene)	92		43 - 129
(d12-Chrysene)	107		52 - 144
(d12-Perylene)	88		36 - 161
(d8-Naphthalene)	69		25 - 125

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

**Lab Sample ID: 23VG39G08B**  
**Matrix: WATER**  
**Analysis Batch: 23VG39G08**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			07/17/23 12:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE					07/17/23 12:33	1

**Lab Sample ID: 23VG39G08L**  
**Matrix: WATER**  
**Analysis Batch: 23VG39G08**

**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	0.472		mg/L		94	60 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOFLUOROBENZENE	109		70 - 130

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

**Lab Sample ID: 23DSG024WB**  
**Matrix: WATER**  
**Analysis Batch: 23DSG024W**

**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			07/21/23 20:09	1
JP5	ND	U	0.05		mg/L			07/21/23 20:09	1
JP8	ND	U	0.05		mg/L			07/21/23 20:09	1
MOTOR OIL	ND	U	0.05		mg/L			07/21/23 20:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE					07/21/23 20:09	1
HEXACOSANE					07/21/23 20:09	1

# QC Sample Results

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

Job ID: 380-54871-1

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

**Lab Sample ID: 23DSG024WL**  
**Matrix: WATER**  
**Analysis Batch: 23DSG024W**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
DIESEL	2.5	2.24		mg/L		90	50 - 130
	<i>LCS</i>	<i>LCS</i>					
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
BROMOBENZENE	68		60 - 130				
HEXACOSANE	91		60 - 130				

**Lab Sample ID: 23J5G024WL**  
**Matrix: WATER**  
**Analysis Batch: 23DSG024W**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
JP5	2.5	1.79		mg/L		72	30 - 160
	<i>LCS</i>	<i>LCS</i>					
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
BROMOBENZENE	75		60 - 130				
HEXACOSANE	88		60 - 130				

**Lab Sample ID: 23J8G024WL**  
**Matrix: WATER**  
**Analysis Batch: 23DSG024W**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
JP8	2.5	1.97		mg/L		79	30 - 160
	<i>LCS</i>	<i>LCS</i>					
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
BROMOBENZENE	87		60 - 130				
HEXACOSANE	92		60 - 130				

# QC Association Summary

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

Job ID: 380-54871-1

## GC/MS Semi VOA

### Prep Batch: 47577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54871-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	
MB 380-47577/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-47577/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-47577/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-47577/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-54729-AZ-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-54798-B-1-A DU	Duplicate	Total/NA	Water	525.2	

### Analysis Batch: 47791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54871-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	47577
MB 380-47577/1-A	Method Blank	Total/NA	Water	525.2	47577
LCS 380-47577/3-A	Lab Control Sample	Total/NA	Water	525.2	47577
LCSD 380-47577/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	47577
MRL 380-47577/2-A	Lab Control Sample	Total/NA	Water	525.2	47577
380-54729-AZ-1-A MS	Matrix Spike	Total/NA	Water	525.2	47577
380-54798-B-1-A DU	Duplicate	Total/NA	Water	525.2	47577

## Subcontract

### Analysis Batch: O-41148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54871-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-41148_P
108348-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-41148_P
108348-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-41148_P
108348-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-41148_P

### Analysis Batch: 23DSG024W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54871-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSG024WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSG024WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5G024WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8G024WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

### Analysis Batch: 23VG39G08

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54871-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

Eurofins Eaton Analytical Pomona

# QC Association Summary

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

Job ID: 380-54871-1

## Subcontract (Continued)

### Analysis Batch: 23VG39G08 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54871-2	FB MOANALUA WELLS (331-223-TP202)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39G08B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39G08L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

### Prep Batch: O-41148\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54871-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	EPA_625	
108348-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
108348-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
108348-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	



# Lab Chronicle

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

Job ID: 380-54871-1

**Client Sample ID: MOANALUA WELLS (331-223-TP202)**

**Lab Sample ID: 380-54871-1**

Date Collected: 07/12/23 09:30

Matrix: Drinking Water

Date Received: 07/14/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			47577	OTM3	EA POM	07/17/23 10:30
Total/NA	Analysis	525.2		1	47791	Q8LA	EA POM	07/18/23 17:56
Total/NA	Prep	EPA_625		1	O-41148_P			07/17/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-41148	YC		07/30/23 21:27
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39G08	SCerva		07/17/23 21:07
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSG024W	SDees		07/22/23 00:49

**Client Sample ID: FB MOANALUA WELLS (331-223-TP202)**

**Lab Sample ID: 380-54871-2**

Date Collected: 07/12/23 09:30

Matrix: Water

Date Received: 07/14/23 10:20

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	23VG39G08	SCerva		07/17/23 21:44

**Laboratory References:**

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

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



# Accreditation/Certification Summary

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

Job ID: 380-54871-1

## Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	1-Methylnaphthalene
525.2	525.2	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	2-Methylnaphthalene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525.2	525.2	Drinking Water	4,4'-DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	Alachlor
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	Atrazine
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[a]pyrene
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	Bis(2-ethylhexyl) phthalate
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butachlor
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	Chlorobenzilate
525.2	525.2	Drinking Water	Chloroneb
525.2	525.2	Drinking Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Drinking Water	Chlorpyrifos
525.2	525.2	Drinking Water	Chrysene
525.2	525.2	Drinking Water	delta-BHC
525.2	525.2	Drinking Water	Di(2-ethylhexyl)adipate
525.2	525.2	Drinking Water	Dibenz(a,h)anthracene
525.2	525.2	Drinking Water	Diclorvos (DDVP)
525.2	525.2	Drinking Water	Dieldrin
525.2	525.2	Drinking Water	Diethylphthalate
525.2	525.2	Drinking Water	Dimethylphthalate
525.2	525.2	Drinking Water	Di-n-butyl phthalate
525.2	525.2	Drinking Water	Di-n-octyl phthalate
525.2	525.2	Drinking Water	Endosulfan I (Alpha)
525.2	525.2	Drinking Water	Endosulfan II (Beta)
525.2	525.2	Drinking Water	Endosulfan sulfate

# Accreditation/Certification Summary

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

Job ID: 380-54871-1

## Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	Endrin
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	Heptachlor
525.2	525.2	Drinking Water	Heptachlor epoxide (isomer B)
525.2	525.2	Drinking Water	Hexachlorobenzene
525.2	525.2	Drinking Water	Hexachlorocyclopentadiene
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Drinking Water	Isophorone
525.2	525.2	Drinking Water	Lindane
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Methoxychlor
525.2	525.2	Drinking Water	Metolachlor
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	Propachlor
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Simazine
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: 380-54871-1

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

**Protocol References:**

EPA = US Environmental Protection Agency

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

**Laboratory References:**

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

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



# Sample Summary

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

Job ID: 380-54871-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-54871-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	07/12/23 09:30	07/14/23 10:20	HI0000331
380-54871-2	FB MOANALUA WELLS (331-223-TP202)	Water	07/12/23 09:30	07/14/23 10:20	

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**EMAX**  
LABORATORIES, INC.  
3051 Fujita Street  
Torrance, CA 90505  
Tel: (310)-618-8889

Date: 08-11-2023  
EMAX Batch No.: 23G130

Attn: Jackie Contreras

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

Subject: Laboratory Report  
Project: 380-54871

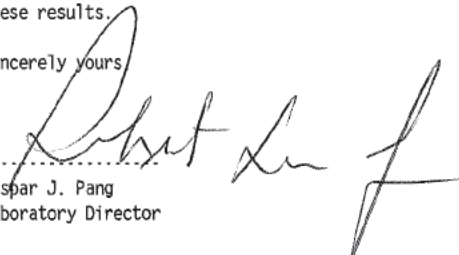
Enclosed is the Laboratory report for samples received on 07/17/23.  
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-54871-1	G130-01	07/12/23	WATER	TPH GASOLINE TPH
380-54871-2	G130-02	07/12/23	WATER	TPH GASOLINE

The results are summarized on the following pages.

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

Sincerely yours

  
.....  
Caspar J. Pang  
Laboratory Director

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

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

NELAP Accredited Certificate Number CA002912022-24  
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing  
California ELAP Accredited Certificate Number 2672





Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input checked="" type="checkbox"/> GSO <input type="checkbox"/> Others <input type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery	Airbill / Tracking Number	ECN <u>23G130</u> Recipient <u>Shawin Zamora</u> Date <u>07/17/23</u> Time <u>12:07</u>
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**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 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>2.6/2.4</u> °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
Thermometer: <u>(A) S/N 221852708</u>	<u>B - S/N 221925379</u>	<u>C - S/N _____</u>	<u>D - S/N _____</u>

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

**DISCREPANCIES**

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<u>1</u>	<u>5,6</u>	<u>02</u>	<u>JP5/JP8 not indicated on label</u>	<u>R1</u>
<i>(Large diagonal scribble across the table)</i>				
			<u>JSR 07/17</u>	

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. MS 7/19/23

**NOTES/OBSERVATIONS:**

SAMPLE MATRIX IS DRINKING WATER?  YES  NO

**LEGEND:**

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

Sample Labeling <u>Nandeen / Jocelyne</u> <u>Nacana / Joli-Kenny</u>	SRF <u>Jocelyne</u> Date <u>07/17/23</u>	PM <u>AB</u> Date <u>7/19/23</u>
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## 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

380-54871

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

SDG#: 23G130



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-54871

SDG : 23G130

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

A total of two(2) water samples were received on 07/17/23 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. VG39G08B - 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. VG39G08L/VG39G08C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Gasoline was within MS QC limits in G106-01M/G106-01S. 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 : 380-54871  
 Laboratory Sample ID : V639608B  
 Instrument ID : GCT039

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V639608B	1	NA	07/17/2312:33	07/17/2312:33	EG17005A	EG17004A	23VG39G08	Method Blank
LCS1W	V639608L	1	NA	07/17/2313:09	07/17/2313:09	EG17006A	EG17004A	23VG39G08	Lab Control Sample (LCS)
LCD1W	V639608C	1	NA	07/17/2313:46	07/17/2313:46	EG17007A	EG17004A	23VG39G08	LCS Duplicate
380-54871-1	G130-01	1	NA	07/17/2321:07	07/17/2321:07	EG17019A	EG17014A	23VG39G08	Field Sample
380-54871-2	G130-02	1	NA	07/17/2321:44	07/17/2321:44	EG17020A	EG17014A	23VG39G08	Field Sample

FN - Filename  
 % Moist - Percent Moisture



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# SAMPLE RESULTS



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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 07/12/23 09:30
Project     : 380-54871                   Date Received: 07/17/23
Batch No.   : 23G130                       Date Extracted: 07/17/23 21:44
Sample ID   : 380-54871-2                 Date Analyzed: 07/17/23 21:44
Lab Samp ID: G130-02                       Dilution Factor: 1
Lab File ID: EG17020A                       Matrix: WATER
Ext Btch ID: 23VG39G08                       % Moisture: NA
Calib. Ref.: EG17014A                       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: 07/17/23 12:33
Project     : 380-54871                  Date Received: 07/17/23
Batch No.   : 23G130                     Date Extracted: 07/17/23 12:33
Sample ID   : MBLK1W                     Date Analyzed: 07/17/23 12:33
Lab Samp ID: VG39G08B                   Dilution Factor: 1
Lab File ID: EG17005A                    Matrix: WATER
Ext Btch ID: 23VG39G08                   % Moisture: NA
Calib. Ref.: EG17004A                    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	0.0323	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



EMAX QUALITY CONTROL DATA  
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-54871  
BATCH NO. : 23G130  
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39G08B	VG39G08L	VG39G08C
LAB FILE ID	: EG17005A	EG17006A	EG17007A
DATE PREPARED	: 07/17/23 12:33	07/17/23 13:09	07/17/23 13:46
DATE ANALYZED	: 07/17/23 12:33	07/17/23 13:09	07/17/23 13:46
PREP BATCH	: 23VG39G08	23VG39G08	23VG39G08
CALIBRATION REF:	EG17004A	EG17004A	EG17004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.472	94	0.500	0.499	100	6	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0437	109	0.0400	0.0428	107	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 : 380-54548  
BATCH NO. : 23G106  
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-54548-1	380-54548-1MS	380-54548-1MSD
LAB SAMPLE ID	: G106-01	G106-01M	G106-01S
LAB FILE ID	: EG17008A	EG17009A	EG17010A
DATE PREPARED	: 07/17/23 14:22	07/17/23 14:59	07/17/23 15:36
DATE ANALYZED	: 07/17/23 14:22	07/17/23 14:59	07/17/23 15:36
PREP BATCH	: 23VG39G08	23VG39G08	23VG39G08
CALIBRATION REF:	EG17004A	EG17004A	EG17004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.469	94	0.500	0.439	88	7	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0433	108	0.0400	0.0408	102	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-54871

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23G130



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-54871

SDG : 23G130

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 07/17/23 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. DSG024WB - 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. DSG024WL/DSG024WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Diesel was within MS QC limits in 23G106-01M/23G106-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-54871

SDG : 23G130

METHOD 3520C/8015B  
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 07/17/23 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. DSG024WB - 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. J5G024WL/J5G024WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. JP5 was within MS QC limits in 23G106-01M/23G106-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-54871

SDG : 23G130

METHOD 3520C/8015B  
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 07/17/23 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. DSG024WB - 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. J8G024WL/J8G024WC 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  
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL  
Project : 380-54871

SDG NO. : 23G130  
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
380-54871-1	DSG024WB	1	NA	07/21/2320:09	07/20/2312:30	LG21009A	LG21004A	23DSG024W	Method Blank
	J5G024WL	1	NA	07/21/2321:05	07/20/2312:30	LG21012A	LG21004A	23DSG024W	Lab Control Sample (LCS)
	J5G024WC	1	NA	07/21/2321:24	07/20/2312:30	LG21013A	LG21004A	23DSG024W	LCS Duplicate
	G130-01	1	NA	07/22/2300:49	07/20/2312:30	LG21024A	LG21004A	23DSG024W	Field Sample

FN - Filename  
% Moist - Percent Moisture





LAB CHRONICLE  
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL  
Project : 380-54871

SDG NO. : 23G130  
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
380-54871-1	DSG024WB	1	NA	07/21/2320:09	07/20/2312:30	LG21009A	LG21005A	23DSG024W	Method Blank
	J86024WL	1	NA	07/21/2321:42	07/20/2312:30	LG21014A	LG21005A	23DSG024W	Lab Control Sample (LCS)
	J86024WC	1	NA	07/21/2322:01	07/20/2312:30	LG21015A	LG21005A	23DSG024W	LCS Duplicate
	G130-01	1	NA	07/22/2300:49	07/20/2312:30	LG21024A	LG21005A	23DSG024W	Field Sample

FN - Filename  
% Moist - Percent Moisture



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# SAMPLE RESULTS

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 07/12/23 09:30
Project     : 380-54871                   Date Received: 07/17/23
Batch No.   : 23G130                       Date Extracted: 07/20/23 12:30
Sample ID   : 380-54871-1                 Date Analyzed: 07/22/23 00:49
Lab Samp ID : 23G130-01                   Dilution Factor: 1
Lab File ID : LG21024A                     Matrix: WATER
Ext Btch ID : 23DSG024W                    % Moisture: NA
Calib. Ref.: LG21003A                     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	0.379	0.560	68	60-130
Hexacosane	0.136	0.140	97	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 : 890ml                      Final Volume : 5ml  
Prepared by    : RGalan                         Analyzed by : SDeeso

METHOD 3520C/8015B  
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 07/12/23 09:30
Project    : 380-54871                   Date Received: 07/17/23
Batch No.  : 23G130                       Date Extracted: 07/20/23 12:30
Sample ID  : 380-54871-1                 Date Analyzed: 07/22/23 00:49
Lab Samp ID: 23G130-01                   Dilution Factor: 1
Lab File ID: LG21024A                     Matrix: WATER
Ext Btch ID: 23DSG024W                   % Moisture: NA
Calib. Ref.: LG21004A                     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	0.379	0.560	68	60-130
Hexacosane	0.136	0.140	97	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 : 890ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

METHOD 3520C/8015B  
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 07/12/23 09:30
Project     : 380-54871                 Date Received: 07/17/23
Batch No.   : 23G130                   Date Extracted: 07/20/23 12:30
Sample ID   : 380-54871-1              Date Analyzed: 07/22/23 00:49
Lab Samp ID: 23G130-01                 Dilution Factor: 1
Lab File ID: LG21024A                  Matrix: WATER
Ext Btch ID: 23DSG024W                 % Moisture: NA
Calib. Ref.: LG21005A                  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	0.379	0.560	68	60-130
Hexacosane	0.136	0.140	97	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 : 890ml                      Final Volume : 5ml  
 Prepared by : RGalan                      Analyzed by : SDeeso

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# QC SUMMARIES

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 07/20/23 12:30
Project     : 380-54871                   Date Received: 07/20/23
Batch No.   : 23G130                       Date Extracted: 07/20/23 12:30
Sample ID   : MBLK1W                       Date Analyzed: 07/21/23 20:09
Lab Samp ID: DSG024WB                       Dilution Factor: 1
Lab File ID: LG21009A                       Matrix: WATER
Ext Btch ID: 23DSG024W                       % Moisture: NA
Calib. Ref.: LG21003A                       Instrument ID: D5
=====
  
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.025	0.012	
Motor Oil	ND	0.050	0.025	
-----				
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.380	0.500	76	60-130
Hexacosane	0.117	0.125	93	60-130

Notes:

```

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

```

Sample Amount   : 1000ml                   Final Volume : 5ml
Prepared by     : RGalan                     Analyzed by  : SDeeso
  
```

EMAX QUALITY CONTROL DATA  
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-54871  
BATCH NO. : 23G130  
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA  
DILUTION FACTOR: 1 1  
SAMPLE ID : MBLK1W LCS1W LCD1W  
LAB SAMPLE ID : DSG024WB DSG024WL DSG024WC  
LAB FILE ID : LG21009A LG21010A LG21011A  
DATE PREPARED : 07/20/23 12:30 07/20/23 12:30 07/20/23 12:30  
DATE ANALYZED : 07/21/23 20:09 07/21/23 20:27 07/21/23 20:46  
PREP BATCH : 23DSG024W 23DSG024W 23DSG024W  
CALIBRATION REF: LG21003A LG21003A LG21003A

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	2.24	90	2.50	2.13	85	5	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.341	68	0.500	0.365	73	60-130
Hexacosane	0.125	0.114	91	0.125	0.122	98	60-130

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



EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-54548  
BATCH NO. : 23G106  
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-54548-1	380-54548-1MS	380-54548-1MSD
LAB SAMPLE ID	: 23G106-01	23G106-01M	23G106-01S
LAB FILE ID	: LG21016A	LG21017A	LG21018A
DATE PREPARED	: 07/20/23 12:30	07/20/23 12:30	07/20/23 12:30
DATE ANALYZED	: 07/21/23 22:20	07/21/23 22:38	07/21/23 22:57
PREP BATCH	: 23DSG024W	23DSG024W	23DSG024W
CALIBRATION REF:	LG21003A	LG21003A	LG21003A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.70	2.49	92	2.65	2.42	91	3	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.540	0.372	69	0.530	0.407	77	60-130
Hexacosane	0.135	0.136	101	0.132	0.122	92	60-130

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

METHOD 3520C/8015B  
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 07/20/23 12:30
Project    : 380-54871                   Date Received: 07/20/23
Batch No.  : 23G130                       Date Extracted: 07/20/23 12:30
Sample ID  : MBLK1W                       Date Analyzed: 07/21/23 20:09
Lab Samp ID: DSG024WB                     Dilution Factor: 1
Lab File ID: LG21009A                     Matrix: WATER
Ext Btch ID: 23DSG024W                   % Moisture: NA
Calib. Ref.: LG21004A                   Instrument ID: D5
=====
    
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.380	0.500	76	60-130
Hexacosane	0.117	0.125	93	60-130

Notes:

RL : Reporting Limit  
 Parameter H-C Range  
 JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml                      Final Volume : 5ml  
 Prepared by : RGalan                        Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA  
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-54871  
BATCH NO. : 23G130  
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA  
DILUTION FACTOR: 1 1  
SAMPLE ID : MBLK1W LCS1W LCD1W  
LAB SAMPLE ID : DSG024WB J5G024WL J5G024WC  
LAB FILE ID : LG21009A LG21012A LG21013A  
DATE PREPARED : 07/20/23 12:30 07/20/23 12:30 07/20/23 12:30  
DATE ANALYZED : 07/21/23 20:09 07/21/23 21:05 07/21/23 21:24  
PREP BATCH : 23DSG024W 23DSG024W 23DSG024W  
CALIBRATION REF: LG21004A LG21004A LG21004A

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	1.79	72	2.50	1.83	73	2	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.376	75	0.500	0.407	81	60-130
Hexacosane	0.125	0.110	88	0.125	0.113	90	60-130

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

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-54548  
BATCH NO. : 23G106  
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-54548-1	380-54548-1MS	380-54548-1MSD
LAB SAMPLE ID	: 23G106-01	23G106-01M	23G106-01S
LAB FILE ID	: LG21016A	LG21019A	LG21020A
DATE PREPARED	: 07/20/23 12:30	07/20/23 12:30	07/20/23 12:30
DATE ANALYZED	: 07/21/23 22:20	07/21/23 23:16	07/21/23 23:34
PREP BATCH	: 23DSG024W	23DSG024W	23DSG024W
CALIBRATION REF:	LG21004A	LG21004A	LG21004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.70	1.98	73	2.72	1.75	64	12	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.540	0.383	71	0.545	0.346	63	60-130
Hexacosane	0.135	0.115	85	0.136	0.118	87	60-130

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

METHOD 3520C/8015B  
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 07/20/23 12:30
Project    : 380-54871                   Date Received: 07/20/23
Batch No.  : 23G130                       Date Extracted: 07/20/23 12:30
Sample ID  : MBLK1W                       Date Analyzed: 07/21/23 20:09
Lab Samp ID: DSG024WB                     Dilution Factor: 1
Lab File ID: LG21009A                     Matrix: WATER
Ext Btch ID: 23DSG024W                   % Moisture: NA
Calib. Ref.: LG21005A                    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	0.380	0.500	76	60-130
Hexacosane	0.117	0.125	93	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA  
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-54871  
BATCH NO. : 23G130  
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA  
DILUTION FACTOR: 1 1  
SAMPLE ID : MBLK1W LCS1W LCD1W  
LAB SAMPLE ID : DSG024WB J8G024WL J8G024WC  
LAB FILE ID : LG21009A LG21014A LG21015A  
DATE PREPARED : 07/20/23 12:30 07/20/23 12:30 07/20/23 12:30  
DATE ANALYZED : 07/21/23 20:09 07/21/23 21:42 07/21/23 22:01  
PREP BATCH : 23DSG024W 23DSG024W 23DSG024W  
CALIBRATION REF: LG21005A LG21005A LG21005A

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	1.97	79	2.50	2.38	95	19	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.433	87	0.500	0.479	96	60-130
Hexacosane	0.125	0.115	92	0.125	0.112	90	60-130

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

August 01, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-54871-1  
Physis Project ID: 1407003-417

Dear Rachelle,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 7/17/2023. 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,

Rachel Hansen  
714 602-5320  
Extension 203  
rachelhansen@physislabs.com

## PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-417

RED-HILL Project # 38001111 Job # 380-54871-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
108349	MOANALUA WELLS	331-223-TP202 (380-5481-1)	7/12/2023	9:30	Samplewater	Not Specified

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## ABBREVIATIONS and ACRONYMS

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

## QUALITY ASSURANCE SUMMARY

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

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

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

**PRECISION:** Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS<sub>1</sub>/MS<sub>2</sub>, BS<sub>1</sub>/BS<sub>2</sub>, LCS<sub>1</sub>/LCS<sub>2</sub>, LCM<sub>1</sub>/LCM<sub>2</sub>, CRM<sub>1</sub>/CRM<sub>2</sub>, surrogate spikes and/or replicate project sample analysis (R<sub>1</sub>/R<sub>2</sub>) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

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

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

i - 4 of 6

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

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## CASE NARRATIVE

### QUALIFIER NOTES

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

#### **ND**

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

# BIANALYTICALS

# REPORT

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## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 108349-R1</b>	<b>MOANALUA WELLS 331-223-TP202</b>	<b>Matrix: Samplewater</b>					<b>Sampled:</b>	<b>12-Jul-23 9:30</b>		<b>Received:</b>	<b>17-Jul-23</b>
(d10-Acenaphthene)	EPA 625.1	% Recovery	57	1			Total		O-41148	17-Jul-23	30-Jul-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	91	1			Total		O-41148	17-Jul-23	30-Jul-23
(d12-Chrysene)	EPA 625.1	% Recovery	107	1			Total		O-41148	17-Jul-23	30-Jul-23
(d12-Perylene)	EPA 625.1	% Recovery	81	1			Total		O-41148	17-Jul-23	30-Jul-23
(d8-Naphthalene)	EPA 625.1	% Recovery	57	1			Total		O-41148	17-Jul-23	30-Jul-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23

## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-41148	17-Jul-23	30-Jul-23
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41148	17-Jul-23	30-Jul-23





# QUALITY CONTROL REPORT

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**Polynuclear Aromatic Hydrocarbons**

**QUALITY CONTROL REPORT**

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE <sub>c</sub>
							LEVEL	RESULT	%	LIMITS	%
<b>Sample ID: 108348-B1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>		<b>Sampled:</b>		<b>Received:</b>		
		Method: EPA 625.1		Batch ID: O-41148		Prepared: 17-Jul-23		Analyzed: 30-Jul-23			
(d10-Acenaphthene)	Total	65	1			% Recovery	100	65	27 - 133%	PASS	
(d10-Phenanthrene)	Total	102	1			% Recovery	100	102	43 - 129%	PASS	
(d12-Chrysene)	Total	107	1			% Recovery	100	107	52 - 144%	PASS	
(d12-Perylene)	Total	85	1			% Recovery	100	85	36 - 161%	PASS	
(d8-Naphthalene)	Total	66	1			% Recovery	100	66	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					

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE <sub>c</sub>
							LEVEL	RESULT	%	LIMITS	%
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L					
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L					
Fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Fluorene	Total	ND	1	0.001	0.005	µg/L					
Indeno[1,2,3-cd]pyrene	Total	ND	1	0.001	0.005	µg/L					
Naphthalene	Total	ND	1	0.001	0.005	µg/L					
Perylene	Total	ND	1	0.001	0.005	µg/L					
Phenanthrene	Total	ND	1	0.001	0.005	µg/L					
Pyrene	Total	ND	1	0.001	0.005	µg/L					



**Polynuclear Aromatic Hydrocarbons**

**QUALITY CONTROL REPORT**

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE <sub>c</sub>	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
<b>Sample ID: 108348-BS1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>		
		Method: EPA 625.1			Batch ID: O-41148			Prepared: 17-Jul-23		Analyzed: 30-Jul-23		
(d10-Acenaphthene)	Total	58	1				% Recovery	100	0	58	27 - 133% PASS	
(d10-Phenanthrene)	Total	80	1				% Recovery	100	0	80	43 - 129% PASS	
(d12-Chrysene)	Total	96	1				% Recovery	100	0	96	52 - 144% PASS	
(d12-Perylene)	Total	79	1				% Recovery	100	0	79	36 - 161% PASS	
(d8-Naphthalene)	Total	60	1				% Recovery	100	0	60	25 - 125% PASS	
1-Methylnaphthalene	Total	0.352	1	0.001	0.005	µg/L		0.5	0	70	31 - 128% PASS	
1-Methylphenanthrene	Total	0.505	1	0.001	0.005	µg/L		0.5	0	101	66 - 127% PASS	
2,3,5-Trimethylnaphthalene	Total	0.441	1	0.001	0.005	µg/L		0.5	0	88	55 - 122% PASS	
2,6-Dimethylnaphthalene	Total	0.394	1	0.001	0.005	µg/L		0.5	0	79	48 - 120% PASS	
2-Methylnaphthalene	Total	0.396	1	0.001	0.005	µg/L		0.5	0	79	47 - 130% PASS	
Acenaphthene	Total	0.38	1	0.001	0.005	µg/L		0.5	0	76	53 - 131% PASS	
Acenaphthylene	Total	0.431	1	0.001	0.005	µg/L		0.5	0	86	43 - 140% PASS	
Anthracene	Total	0.429	1	0.001	0.005	µg/L		0.5	0	86	58 - 135% PASS	
Benz[a]anthracene	Total	0.502	1	0.001	0.005	µg/L		0.5	0	100	55 - 145% PASS	
Benzo[a]pyrene	Total	0.443	1	0.001	0.005	µg/L		0.5	0	89	51 - 143% PASS	
Benzo[b]fluoranthene	Total	0.484	1	0.001	0.005	µg/L		0.5	0	97	46 - 165% PASS	
Benzo[e]pyrene	Total	0.464	1	0.001	0.005	µg/L		0.5	0	93	42 - 152% PASS	
Benzo[g,h,i]perylene	Total	0.466	1	0.001	0.005	µg/L		0.5	0	93	63 - 133% PASS	
Benzo[k]fluoranthene	Total	0.483	1	0.001	0.005	µg/L		0.5	0	97	56 - 145% PASS	
Biphenyl	Total	0.456	1	0.001	0.005	µg/L		0.5	0	91	56 - 119% PASS	
Chrysene	Total	0.476	1	0.001	0.005	µg/L		0.5	0	95	56 - 141% PASS	
Dibenz[a,h]anthracene	Total	0.454	1	0.001	0.005	µg/L		0.5	0	91	55 - 150% PASS	
Dibenzo[a,l]pyrene	Total	0.386	1	0.001	0.005	µg/L		0.5	0	77	50 - 150% PASS	

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE <sub>c</sub>
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	46 - 126%	PASS		
Disalicylidenepropanediamin	Total	28.1	1	0.05	0.1	µg/L	50	0	56	50 - 150%	PASS		
Fluoranthene	Total	0.58	1	0.001	0.005	µg/L	0.5	0	116	60 - 146%	PASS		
Fluorene	Total	0.421	1	0.001	0.005	µg/L	0.5	0	84	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	50 - 151%	PASS		
Naphthalene	Total	0.356	1	0.001	0.005	µg/L	0.5	0	71	41 - 126%	PASS		
Perylene	Total	0.407	1	0.001	0.005	µg/L	0.5	0	81	48 - 141%	PASS		
Phenanthrene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	67 - 127%	PASS		
Pyrene	Total	0.53	1	0.001	0.005	µg/L	0.5	0	106	54 - 156%	PASS		

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODE <sup>c</sup>	
									%	LIMITS	%	LIMITS		
<b>Sample ID: 108348-BS2</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>			<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-41148			Prepared: 17-Jul-23			Analyzed: 30-Jul-23			
(d10-Acenaphthene)	Total	68	1			% Recovery	100	0	68	27 - 133%	PASS	16	30	PASS
(d10-Phenanthrene)	Total	92	1			% Recovery	100	0	92	43 - 129%	PASS	14	30	PASS
(d12-Chrysene)	Total	107	1			% Recovery	100	0	107	52 - 144%	PASS	11	30	PASS
(d12-Perylene)	Total	88	1			% Recovery	100	0	88	36 - 161%	PASS	11	30	PASS
(d8-Naphthalene)	Total	69	1			% Recovery	100	0	69	25 - 125%	PASS	14	30	PASS
1-Methylnaphthalene	Total	0.388	1	0.001	0.005	µg/L	0.5	0	78	31 - 128%	PASS	11	30	PASS
1-Methylphenanthrene	Total	0.546	1	0.001	0.005	µg/L	0.5	0	109	66 - 127%	PASS	8	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	55 - 122%	PASS	6	30	PASS
2,6-Dimethylnaphthalene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	48 - 120%	PASS	7	30	PASS
2-Methylnaphthalene	Total	0.414	1	0.001	0.005	µg/L	0.5	0	83	47 - 130%	PASS	5	30	PASS
Acenaphthene	Total	0.403	1	0.001	0.005	µg/L	0.5	0	81	53 - 131%	PASS	6	30	PASS
Acenaphthylene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	43 - 140%	PASS	9	30	PASS
Anthracene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	58 - 135%	PASS	9	30	PASS
Benz[a]anthracene	Total	0.541	1	0.001	0.005	µg/L	0.5	0	108	55 - 145%	PASS	8	30	PASS
Benzo[a]pyrene	Total	0.492	1	0.001	0.005	µg/L	0.5	0	98	51 - 143%	PASS	10	30	PASS
Benzo[b]fluoranthene	Total	0.489	1	0.001	0.005	µg/L	0.5	0	98	46 - 165%	PASS	1	30	PASS
Benzo[e]pyrene	Total	0.491	1	0.001	0.005	µg/L	0.5	0	98	42 - 152%	PASS	5	30	PASS
Benzo[g,h,i]perylene	Total	0.493	1	0.001	0.005	µg/L	0.5	0	99	63 - 133%	PASS	6	30	PASS
Benzo[k]fluoranthene	Total	0.496	1	0.001	0.005	µg/L	0.5	0	99	56 - 145%	PASS	2	30	PASS
Biphenyl	Total	0.505	1	0.001	0.005	µg/L	0.5	0	101	56 - 119%	PASS	10	30	PASS
Chrysene	Total	0.507	1	0.001	0.005	µg/L	0.5	0	101	56 - 141%	PASS	6	30	PASS
Dibenz[a,h]anthracene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	55 - 150%	PASS	5	30	PASS
Dibenzo[a,l]pyrene	Total	0.401	1	0.001	0.005	µg/L	0.5	0	80	50 - 150%	PASS	4	30	PASS

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY			PRECISION		QA CODE <sub>c</sub>
									LEVEL	RESULT	%	LIMITS	%	
Dibenzothiophene	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	46 - 126%	PASS	3	30	PASS
Disalicylidenepropanediamin	Total	29	1	0.05	0.1	µg/L	50	0	54	50 - 150%	PASS	4	30	PASS
Fluoranthene	Total	0.629	1	0.001	0.005	µg/L	0.5	0	126	60 - 146%	PASS	8	30	PASS
Fluorene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	58 - 131%	PASS	9	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	50 - 151%	PASS	4	30	PASS
Naphthalene	Total	0.398	1	0.001	0.005	µg/L	0.5	0	80	41 - 126%	PASS	12	30	PASS
Perylene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	48 - 141%	PASS	9	30	PASS
Phenanthrene	Total	0.464	1	0.001	0.005	µg/L	0.5	0	93	67 - 127%	PASS	6	30	PASS
Pyrene	Total	0.565	1	0.001	0.005	µg/L	0.5	0	113	54 - 156%	PASS	6	30	PASS

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# PHYSIS

**TENTATIVELY IDENTIFIED COMPOUNDS**

ENVIRONMENTAL LABORATORIES, INC.

*Innovative Solutions for Nature*



Sample ID: 108349

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.8314	3.4223	1111	Anthracene-D10	1517-22-2	89
10.1755	8.6398	2805	m-Menthane, (1S,3S)-(+)-	13837-67-7	91
10.1193	3.7274	1210	Octane, 3-methyl-6-methylene-	74630-07-2	85
10.3896	2.3782	772	Furan, 2,5-dihydro-2,5-dimethyl-	59242-27-2	86
10.0593	1.0798	351	Sulfurous acid, di(cyclohexylmethyl) ester	1010309-22-7	85
10.0593	1.0399	338	Cyclohexane, 1-isopropyl-1-methyl-	16580-26-0	85
41.0730	0.4362	142	n-Hexadecanoic acid	57-10-3	82

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1\_41148

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.8301	3.4334	1111	Anthracene-D10	1517-22-2	89
10.1718	3.7748	1222	m-Menthane, (1S,3S)-(+)-	13837-67-7	90
10.3871	3.0103	974	Cyclohexane, nitro-	1122-60-7	87
10.1172	1.8635	603	Octane, 3-methyl-6-methylene-	74630-07-2	83
10.0414	1.3015	421	Hydroperoxide, 1-ethylbutyl	24254-56-6	86
10.7248	0.8740	283	Cyclohexane, methyl-	108-87-2	83
10.7248	0.6842	221	2-Pentene, 4,4-dimethyl-, (Z)-	762-63-0	86
31.5777	0.3717	120	Benzoic acid, 2-ethylhexyl ester	5444-75-7	82

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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Project Iteration ID: 1407003-417  
 Client Name: Eurofins Eaton Analytical  
 Project Name: RED-HILL Project # 38001111 Job # 380-54871-1  
 COC Page Number: 2 of 2  
 Bottle Label Color: NA

**Sample Receipt Summary**

**Receiving Info**

1. Initials Received By: DA
2. Date Received: 7/17/23
3. Time Received: 1:30
4. Client Name: Eurofins
5. Courier Information: (Please circle)
  - Client
  - UPS
  - Area Fast
  - DRS
  - FedEx
  - GSO/GLS
  - Ontrac
  - PAMS
  - PHYSIS Driver:
    - i. Start Time: \_\_\_\_\_
    - ii. End Time: \_\_\_\_\_
    - iii. Total Mileage: \_\_\_\_\_
    - iv. Number of Pickups: \_\_\_\_\_
6. Container Information: (Please put the # of containers or circle none)
  - Cooler
  - Styrofoam Cooler
  - Boxes
  - None
  - Carboy(s)
  - Carboy Trash Can(s)
  - Carboy Cap(s)
  - Other \_\_\_\_\_
7. What type of ice was used: (Please circle any that apply)
  - Wet Ice
  - Blue Ice
  - Dry Ice
  - Water
  - None
8. Randomly Selected Samples Temperature (°C): 3.1 Used I/R Thermometer # 1-2

**Inspection Info**

1. Initials Inspected By: DA

**Sample Integrity Upon Receipt:**

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

Notes:



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

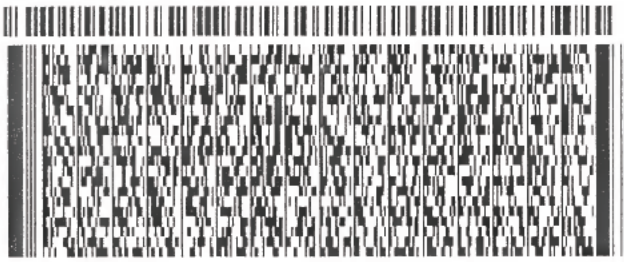
SHIP DATE: 13JUL23  
ACTWGT: 62.00 LB  
CAD: 258050552/INET4610  
  
BILL RECIPIENT

TO EUROFINS RECEIVING DEPARTMENT  
EUROFINS DRINKING WATER TESTING  
941 CORPORATE CENTER DR

POMONA CA 91768

(626) 386-1100 REF  
INV: DEPT:  
PO:

583J46AE49AE3

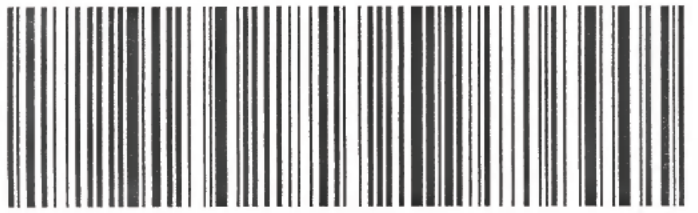


FRI - 14 JUL 10:30A  
PRIORITY OVERNIGHT

1 of 3  
TRK# 7727 3638 6995  
0201  
## MASTER ##

WM ONTA

91768  
CA-US ONT



**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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

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



# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-54871-1

**Login Number: 54871**

**List Source: Eurofins Eaton Analytical Pomona**

**List Number: 1**

**Creator: Sanchez, Joseph G**

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	