eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 2/14/2023 5:37:00 PM

JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-32811-1

Eurofins Eaton Monrovia
750 Royal Oaks Drive
Suite 100
Monrovia CA 91016

See page two for job notes and contact information.

Job Notes

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

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

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

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

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

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

Compliance Statement

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

Authorization

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Authorized for release by
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Table of Contents

Definitions/Glossary

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

Job ID: 380-32811-1

Qualifiers

GC/MS Semi VOA

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

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

Job ID: 380-32811-1

Laboratory: Eurofins Eaton Monrovia

Narrative

Job Narrative
380-32811-1

Comments
No additional comments.

Receipt
The samples were received on 12/29/2022 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, an where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.7º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The Travel Blank's not noted on the CO

GC/MS Semi VOA
Method 525.2: The continuing calibration verification (CCV) associated with batch 380-28759 recovered above the upper contro limit for Di-n-octyl phthalate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the da have been reported. The associated samples are impacted: AIEA GULCH WELLS PUMP 2 (380-32811-1) and (CCVIS 380-28759/2).

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

Subcontract non-Sister
See attached subcontract report.

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

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

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

Detection Summary

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

Job ID: 380-32811-1

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-32811-1

PWSID Number: HI0000331

No Detections.

Client Sample ID: TB AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-32811-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-32811-1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 12/27/22 10:30
Date Received: 12/29/22 10:10

Lab Sample ID: 380-32811-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
2,4'-DDE	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
2,4'-DDT	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
2,4-Dinitrotoluene	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
2,6-Dinitrotoluene	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
4,4'-DDD	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
4,4'-DDE	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
4,4'-DDT	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Acenaphthene	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Acenaphthylene	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Acetochlor	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Alachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
alpha-BHC	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
alpha-Chlordane	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Anthracene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 16:05	1
Atrazine	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Benz(a)anthracene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Benzo[a]pyrene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 16:05	1
Benzo[b]fluoranthene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 16:05	1
Benzo[g,h,i]perylene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Benzo[k]fluoranthene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 16:05	1
beta-BHC	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Bromacil	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Butachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Butylbenzylphthalate	ND		0.50		ug/L		01/03/23 07:51	01/04/23 16:05	1
Caffeine	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Chlorobenzilate	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Chloroneb	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Chlorothalonil (Draconil, Bravo)	ND	^3+	0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Chlorpyrifos	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Chrysene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 16:05	1
delta-BHC	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Di(2-ethylhexyl)adipate	ND		0.60		ug/L		01/03/23 07:51	01/04/23 16:05	1
Bis(2-ethylhexyl) phthalate	ND		0.60		ug/L		01/03/23 07:51	01/04/23 16:05	1
Diazinon (Qualitative)	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Dibenz(a,h)anthracene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Diclorvos (DDVP)	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Dieldrin	ND		0.20		ug/L		01/03/23 07:51	01/04/23 16:05	1
Diethylphthalate	ND		0.50		ug/L		01/03/23 07:51	01/04/23 16:05	1
Dimethoate	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Dimethylphthalate	ND		0.50		ug/L		01/03/23 07:51	01/04/23 16:05	1
Di-n-butyl phthalate	ND		1.0		ug/L		01/03/23 07:51	01/04/23 16:05	1
Di-n-octyl phthalate	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Endosulfan I (Alpha)	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Endosulfan II (Beta)	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Endosulfan sulfate	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Endrin	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Endrin aldehyde	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
EPTC	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 12/27/22 10:30
Date Received: 12/29/22 10:10

Lab Sample ID: 380-32811-1

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Fluorene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
gamma-Chlordane	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Heptachlor	ND		0.040		ug/L		01/03/23 07:51	01/04/23 16:05	1
Heptachlor epoxide (isomer B)	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Hexachlorobenzene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Hexachlorocyclopentadiene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Indeno[1,2,3-cd]pyrene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Isophorone	ND		0.50		ug/L		01/03/23 07:51	01/04/23 16:05	1
Lindane	ND		0.040		ug/L		01/03/23 07:51	01/04/23 16:05	1
Malathion	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Methoxychlor	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Metolachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Metribuzin	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Molinate	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Naphthalene	ND		0.30		ug/L		01/03/23 07:51	01/04/23 16:05	1
Parathion	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Pendimethalin (Penoxaline)	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		01/03/23 07:51	01/04/23 16:05	1
Phenanthrene	ND		0.040		ug/L		01/03/23 07:51	01/04/23 16:05	1
Propachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Pyrene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Simazine	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Terbacil	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Terbuthylazine	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1
Thiobencarb	ND		0.20		ug/L		01/03/23 07:51	01/04/23 16:05	1
trans-Nonachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 16:05	1
Trifluralin	ND		0.10		ug/L		01/03/23 07:51	01/04/23 16:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*01/03/23 07:51*	*01/04/23 16:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*100*		*70 - 130*	*01/03/23 07:51*	*01/04/23 16:05*	*1*
Triphenylphosphate	*114*		*70 - 130*	*01/03/23 07:51*	*01/04/23 16:05*	*1*
Perylene-d12	*98*		*70 - 130*	*01/03/23 07:51*	*01/04/23 16:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Acenaphthene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Acenaphthylene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Anthracene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-32811-1
Date Collected: 12/27/22 10:30
Matrix: Drinking Water
Date Received: 12/29/22 10:10
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		01/03/23 00:00	01/09/23 02:48	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Biphenyl	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Chrysene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Dibenzothiophene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		01/03/23 00:00	01/09/23 02:48	1
Fluoranthene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Fluorene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Naphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Perylene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Phenanthrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1
Pyrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/09/23 02:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*87*		*27 - 133*	*01/03/23 00:00*	*01/09/23 02:48*	*1*
(d10-Phenanthrene)	*92*		*43 - 129*	*01/03/23 00:00*	*01/09/23 02:48*	*1*
(d12-Chrysene)	*96*		*52 - 144*	*01/03/23 00:00*	*01/09/23 02:48*	*1*
(d12-Perylene)	*88*		*36 - 161*	*01/03/23 00:00*	*01/09/23 02:48*	*1*
(d8-Naphthalene)	*77*		*25 - 125*	*01/03/23 00:00*	*01/09/23 02:48*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			01/03/23 22:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*89*		*60 - 140*		*01/03/23 22:20*	*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	0.024		mg/L			01/06/23 06:16	1
JP5	ND	U	0.048		mg/L			01/06/23 06:16	1
JP8	ND	U	0.048		mg/L			01/06/23 06:16	1
MOTOR OIL	ND	U	0.048		mg/L			01/06/23 06:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*86*		*60 - 130*		*01/06/23 06:16*	*1*
HEXACOSANE	*118*		*60 - 130*		*01/06/23 06:16*	*1*

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-32811-2
Date Collected: 12/27/22 10:30
Matrix: Drinking Water
Date Received: 12/29/22 10:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			01/03/23 22:57	1

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

Job ID: 380-32811-1

Client Sample ID: TB AIEA GULCH WELLS PUMP 2
Date Collected: 12/27/22 10:30
Date Received: 12/29/22 10:10

Lab Sample ID: 380-32811-2
Matrix: Drinking Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	89		60 - 140		01/03/23 22:57	1

Action Limit Summary

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

Job ID: 380-32811-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-32811-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	ND		ug/L	2	0.050	525.2	Total/NA
Atrazine	ND		ug/L	3	0.050	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.020	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400	0.60	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.60	525.2	Total/NA
Endrin	ND		ug/L	2	0.10	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.050	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.050	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.050	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.10	525.2	Total/NA
Simazine	ND		ug/L	4	0.050	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-32811-1

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-32811-1	AIEA GULCH WELLS PUMP 2	100	114	98

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-32809-B-1-A MS	Matrix Spike	100	111	99
380-32810-Q-1-A DU	Duplicate	102	119	87
LCS 380-28602/3-A	Lab Control Sample	100	108	100
LCSD 380-28602/4-A	Lab Control Sample Dup	100	111	97
MB 380-28602/1-A	Method Blank	100	108	93
MRL 380-28602/2-A	Lab Control Sample	102	101	94

Surrogate Legend

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

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

Matrix: BlankMatrix — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
103114-B1	Method Blank	89	92	100	84	98
103114-BS1	Lab Control Sample	90	93	97	83	94
103114-BS2	Lab Control Sample Dup	89	93	95	82	99

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**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
380-32811-1	AIEA GULCH WELLS PUMP 2	87	92	96	77	88

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)

Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-32811-1
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)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-32811-1	AIEA GULCH WELLS PUMP 2	89
380-32811-2	TB AIEA GULCH WELLS PUMP 2	89

Surrogate Legend
BFB = BROMOFLUOROBENZENE

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

Matrix: WATER **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	
22VGH7A01B	Method Blank	

Surrogate Legend
BFB = BROMOFLUOROBENZENE

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

Matrix: WATER **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(70-130)
22VGH7A01C	LCD	102
22VGH7A01L	Lab Control Sample	118

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)	
		BB	XACOSA
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
380-32811-1	AIEA GULCH WELLS PUMP 2	86	118

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	XACOSA
Lab Sample ID	Client Sample ID		
22DSA006WB	Method Blank		

Surrogate Legend

Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-32811-1
Project/Site: RED-HILL

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	XACOSA
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
22DSA006WC	LCD	98	114
22DSA006WL	Lab Control Sample	107	122
22J5A006WC	LCD	79	110
22J5A006WL	Lab Control Sample	93	117
22J8A006WC	LCD	98	110
22J8A006WL	Lab Control Sample	97	116

Surrogate Legend

BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

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

Lab Sample ID: MB 380-28602/1-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 28602

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
2,4'-DDE	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
2,4'-DDT	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
2,4-Dinitrotoluene	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
2,6-Dinitrotoluene	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
4,4'-DDD	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
4,4'-DDE	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
4,4'-DDT	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Acenaphthene	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Acenaphthylene	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Acetochlor	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Alachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
alpha-BHC	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
alpha-Chlordane	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Anthracene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 11:23	1
Atrazine	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Benz(a)anthracene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Benzo[a]pyrene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 11:23	1
Benzo[b]fluoranthene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 11:23	1
Benzo[g,h,i]perylene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Benzo[k]fluoranthene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 11:23	1
beta-BHC	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Bromacil	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Butachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Butylbenzylphthalate	ND		0.50		ug/L		01/03/23 07:51	01/04/23 11:23	1
Caffeine	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Chlorobenzilate	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Chloroneb	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Chlorpyrifos	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Chrysene	ND		0.020		ug/L		01/03/23 07:51	01/04/23 11:23	1
delta-BHC	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Di(2-ethylhexyl)adipate	ND		0.60		ug/L		01/03/23 07:51	01/04/23 11:23	1
Bis(2-ethylhexyl) phthalate	ND		0.60		ug/L		01/03/23 07:51	01/04/23 11:23	1
Diazinon (Qualitative)	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Dibenz(a,h)anthracene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Diclorvos (DDVP)	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Dieldrin	ND		0.20		ug/L		01/03/23 07:51	01/04/23 11:23	1
Diethylphthalate	ND		0.50		ug/L		01/03/23 07:51	01/04/23 11:23	1
Dimethoate	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Dimethylphthalate	ND		0.50		ug/L		01/03/23 07:51	01/04/23 11:23	1
Di-n-butyl phthalate	ND		0.99		ug/L		01/03/23 07:51	01/04/23 11:23	1
Di-n-octyl phthalate	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Endosulfan I (Alpha)	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Endosulfan II (Beta)	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Endosulfan sulfate	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Endrin	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Endrin aldehyde	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1

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

Lab Sample ID: MB 380-28602/1-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 28602

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Fluoranthene	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Fluorene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
gamma-Chlordane	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Heptachlor	ND		0.040		ug/L		01/03/23 07:51	01/04/23 11:23	1
Heptachlor epoxide (isomer B)	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Hexachlorobenzene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Hexachlorocyclopentadiene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Indeno[1,2,3-cd]pyrene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Isophorone	ND		0.50		ug/L		01/03/23 07:51	01/04/23 11:23	1
Lindane	ND		0.040		ug/L		01/03/23 07:51	01/04/23 11:23	1
Malathion	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Methoxychlor	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Metolachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Metribuzin	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Molinate	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Naphthalene	ND		0.30		ug/L		01/03/23 07:51	01/04/23 11:23	1
Parathion	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		01/03/23 07:51	01/04/23 11:23	1
Phenanthrene	ND		0.040		ug/L		01/03/23 07:51	01/04/23 11:23	1
Propachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Pyrene	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Simazine	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Terbacil	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Terbuthylazine	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1
Thiobencarb	ND		0.20		ug/L		01/03/23 07:51	01/04/23 11:23	1
trans-Nonachlor	ND		0.050		ug/L		01/03/23 07:51	01/04/23 11:23	1
Trifluralin	ND		0.099		ug/L		01/03/23 07:51	01/04/23 11:23	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*01/03/23 07:51*	*01/04/23 11:23*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*100*		*70 - 130*	*01/03/23 07:51*	*01/04/23 11:23*	*1*
Triphenylphosphate	*108*		*70 - 130*	*01/03/23 07:51*	*01/04/23 11:23*	*1*
Perylene-d12	*93*		*70 - 130*	*01/03/23 07:51*	*01/04/23 11:23*	*1*

Lab Sample ID: LCS 380-28602/3-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 28602

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.98	1.77		ug/L		90	70 - 130
2,4'-DDE	1.98	1.79		ug/L		90	70 - 130
2,4'-DDT	1.98	1.97		ug/L		100	70 - 130
2,4-Dinitrotoluene	1.98	1.68		ug/L		85	70 - 130
2,6-Dinitrotoluene	1.98	1.71		ug/L		86	70 - 130

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

Lab Sample ID: LCS 380-28602/3-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 28602

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	1.98	2.02		ug/L		102	70 - 130
4,4'-DDE	1.98	1.89		ug/L		96	70 - 130
4,4'-DDT	1.98	2.03		ug/L		102	70 - 130
Acenaphthene	1.98	1.78		ug/L		90	70 - 130
Acenaphthylene	1.98	1.76		ug/L		89	70 - 130
Acetochlor	1.98	1.98		ug/L		100	70 - 130
Alachlor	1.98	1.87		ug/L		95	70 - 130
alpha-BHC	1.98	1.80		ug/L		91	70 - 130
alpha-Chlordane	1.98	1.78		ug/L		90	70 - 130
Anthracene	1.98	1.83		ug/L		92	70 - 130
Atrazine	1.98	1.81		ug/L		91	70 - 130
Benz(a)anthracene	1.98	2.00		ug/L		101	70 - 130
Benzo[a]pyrene	1.98	1.98		ug/L		100	70 - 130
Benzo[b]fluoranthene	1.98	1.92		ug/L		97	70 - 130
Benzo[g,h,i]perylene	1.98	2.02		ug/L		102	70 - 130
Benzo[k]fluoranthene	1.98	1.95		ug/L		98	70 - 130
beta-BHC	1.98	1.89		ug/L		96	70 - 130
Bromacil	1.98	2.06		ug/L		104	70 - 130
Butachlor	1.98	2.00		ug/L		101	70 - 130
Butylbenzylphthalate	1.98	2.09		ug/L		106	70 - 130
Caffeine	1.98	1.41		ug/L		71	45 - 137
Chlorobenzilate	1.98	1.92		ug/L		97	70 - 130
Chloroneb	1.98	1.70		ug/L		86	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	1.75		ug/L		88	70 - 130
Chlorpyrifos	1.98	1.87		ug/L		95	70 - 130
Chrysene	1.98	1.80		ug/L		91	70 - 130
delta-BHC	1.98	1.84		ug/L		93	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.32		ug/L		117	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	1.86		ug/L		94	70 - 130
Diazinon (Qualitative)	1.98	1.68		ug/L		85	15 - 132
Dibenz(a,h)anthracene	1.98	2.17		ug/L		109	70 - 130
Diclorvos (DDVP)	1.98	2.11		ug/L		107	70 - 130
Dieldrin	1.98	1.89		ug/L		96	70 - 130
Diethylphthalate	1.98	1.80		ug/L		91	70 - 130
Dimethoate	1.98	1.19		ug/L		60	35 - 100
Dimethylphthalate	1.98	1.81		ug/L		91	70 - 130
Di-n-butyl phthalate	3.96	3.68		ug/L		93	70 - 130
Di-n-octyl phthalate	1.98	1.97		ug/L		100	70 - 130
Endosulfan I (Alpha)	1.98	1.71		ug/L		86	70 - 130
Endosulfan II (Beta)	1.98	1.99		ug/L		101	70 - 130
Endosulfan sulfate	1.98	2.04		ug/L		103	70 - 130
Endrin	1.98	2.03		ug/L		102	70 - 130
Endrin aldehyde	1.98	1.85		ug/L		93	70 - 130
EPTC	1.98	1.91		ug/L		97	70 - 130
Fluoranthene	1.98	1.87		ug/L		95	70 - 130
Fluorene	1.98	1.75		ug/L		88	70 - 130
gamma-Chlordane	1.98	1.81		ug/L		91	70 - 130
Heptachlor	1.98	1.84		ug/L		93	70 - 130
Heptachlor epoxide (isomer B)	1.98	1.84		ug/L		93	70 - 130

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

Lab Sample ID: LCS 380-28602/3-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 28602

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexachlorobenzene			1.98	1.68		ug/L		85	70 - 130		
Hexachlorocyclopentadiene			1.98	1.89		ug/L		96	70 - 130		
Indeno[1,2,3-cd]pyrene			1.98	2.16		ug/L		109	70 - 130		
Isophorone			1.98	1.96		ug/L		99	70 - 130		
Lindane			1.98	1.80		ug/L		91	70 - 130		
Malathion			1.98	2.05		ug/L		104	70 - 130		
Methoxychlor			1.98	2.01		ug/L		102	70 - 130		
Metolachlor			1.98	2.06		ug/L		104	70 - 130		
Metribuzin			1.98	2.08		ug/L		105	70 - 130		
Molinate			1.98	1.92		ug/L		97	70 - 130		
Naphthalene			1.98	1.80		ug/L		91	70 - 130		
Parathion			1.98	2.06		ug/L		104	70 - 130		
Pendimethalin (Penoxaline)			1.98	1.89		ug/L		96	70 - 130		
Phenanthrene			1.98	1.77		ug/L		90	70 - 130		
Propachlor			1.98	1.86		ug/L		94	70 - 130		
Pyrene			1.98	1.88		ug/L		95	70 - 130		
Simazine			1.98	1.89		ug/L		95	70 - 130		
Terbacil			1.98	2.13		ug/L		108	70 - 130		
Terbuthylazine			1.98	1.84		ug/L		93	70 - 130		
Thiobencarb			1.98	2.00		ug/L		101	70 - 130		
trans-Nonachlor			1.98	1.77		ug/L		90	70 - 130		
Trifluralin			1.98	1.73		ug/L		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Triphenylphosphate	*108*		*70 - 130*
Perylene-d12	*100*		*70 - 130*

Lab Sample ID: LCSD 380-28602/4-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 28602

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD			1.98	1.84		ug/L		93	70 - 130	4	20
2,4'-DDE			1.98	1.88		ug/L		95	70 - 130	5	20
2,4'-DDT			1.98	2.05		ug/L		103	70 - 130	4	20
2,4-Dinitrotoluene			1.98	1.78		ug/L		90	70 - 130	6	20
2,6-Dinitrotoluene			1.98	1.80		ug/L		91	70 - 130	5	20
4,4'-DDD			1.98	2.05		ug/L		103	70 - 130	1	20
4,4'-DDE			1.98	1.98		ug/L		100	70 - 130	4	20
4,4'-DDT			1.98	2.07		ug/L		105	70 - 130	2	20
Acenaphthene			1.98	1.85		ug/L		93	70 - 130	4	20
Acenaphthylene			1.98	1.85		ug/L		93	70 - 130	5	20
Acetochlor			1.98	2.01		ug/L		102	70 - 130	2	20
Alachlor			1.98	1.91		ug/L		96	70 - 130	2	20
alpha-BHC			1.98	1.85		ug/L		93	70 - 130	3	20
alpha-Chlordane			1.98	1.87		ug/L		94	70 - 130	5	20
Anthracene			1.98	1.89		ug/L		95	70 - 130	4	20

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

Lab Sample ID: LCSD 380-28602/4-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 28602

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Atrazine			1.98	1.87		ug/L		94	70 - 130	3	20
Benz(a)anthracene			1.98	2.11		ug/L		107	70 - 130	6	20
Benzo[a]pyrene			1.98	2.02		ug/L		102	70 - 130	2	20
Benzo[b]fluoranthene			1.98	2.01		ug/L		101	70 - 130	4	20
Benzo[g,h,i]perylene			1.98	1.95		ug/L		98	70 - 130	4	20
Benzo[k]fluoranthene			1.98	2.05		ug/L		103	70 - 130	5	20
beta-BHC			1.98	1.95		ug/L		98	70 - 130	3	20
Bromacil			1.98	2.20		ug/L		111	70 - 130	7	20
Butachlor			1.98	2.08		ug/L		105	70 - 130	4	20
Butylbenzylphthalate			1.98	2.21		ug/L		111	70 - 130	5	20
Caffeine			1.98	1.43		ug/L		72	45 - 137	1	20
Chlorobenzilate			1.98	2.00		ug/L		101	70 - 130	4	20
Chloroneb			1.98	1.75		ug/L		88	70 - 130	3	20
Chlorothalonil (Draconil, Bravo)			1.98	1.84		ug/L		93	70 - 130	5	20
Chlorpyrifos			1.98	1.97		ug/L		100	70 - 130	5	20
Chrysene			1.98	1.83		ug/L		93	70 - 130	2	20
delta-BHC			1.98	2.04		ug/L		103	70 - 130	10	20
Di(2-ethylhexyl)adipate			1.98	2.26		ug/L		114	70 - 130	2	20
Bis(2-ethylhexyl) phthalate			1.98	1.79		ug/L		90	70 - 130	4	20
Diazinon (Qualitative)			1.98	1.74		ug/L		88	15 - 132	4	20
Dibenz(a,h)anthracene			1.98	2.09		ug/L		106	70 - 130	4	20
Diclorvos (DDVP)			1.98	2.14		ug/L		108	70 - 130	1	20
Dieldrin			1.98	2.03		ug/L		102	70 - 130	7	20
Diethylphthalate			1.98	1.87		ug/L		94	70 - 130	4	20
Dimethoate			1.98	1.29		ug/L		65	35 - 100	8	20
Dimethylphthalate			1.98	1.85		ug/L		93	70 - 130	2	20
Di-n-butyl phthalate			3.97	3.98		ug/L		100	70 - 130	8	20
Di-n-octyl phthalate			1.98	1.78		ug/L		90	70 - 130	10	20
Endosulfan I (Alpha)			1.98	1.77		ug/L		89	70 - 130	4	20
Endosulfan II (Beta)			1.98	2.04		ug/L		103	70 - 130	2	20
Endosulfan sulfate			1.98	2.14		ug/L		108	70 - 130	5	20
Endrin			1.98	2.25		ug/L		114	70 - 130	10	20
Endrin aldehyde			1.98	1.92		ug/L		97	70 - 130	4	20
EPTC			1.98	1.98		ug/L		100	70 - 130	3	20
Fluoranthene			1.98	1.99		ug/L		100	70 - 130	6	20
Fluorene			1.98	1.86		ug/L		94	70 - 130	6	20
gamma-Chlordane			1.98	1.87		ug/L		94	70 - 130	3	20
Heptachlor			1.98	1.89		ug/L		95	70 - 130	3	20
Heptachlor epoxide (isomer B)			1.98	1.97		ug/L		99	70 - 130	7	20
Hexachlorobenzene			1.98	1.79		ug/L		90	70 - 130	6	20
Hexachlorocyclopentadiene			1.98	1.93		ug/L		97	70 - 130	2	20
Indeno[1,2,3-cd]pyrene			1.98	2.14		ug/L		108	70 - 130	1	20
Isophorone			1.98	1.99		ug/L		100	70 - 130	2	20
Lindane			1.98	1.83		ug/L		92	70 - 130	2	20
Malathion			1.98	2.10		ug/L		106	70 - 130	2	20
Methoxychlor			1.98	2.10		ug/L		106	70 - 130	4	20
Metolachlor			1.98	2.13		ug/L		108	70 - 130	4	20
Metribuzin			1.98	2.17		ug/L		109	70 - 130	4	20
Molinate			1.98	2.01		ug/L		102	70 - 130	5	20

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

Lab Sample ID: LCSD 380-28602/4-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 28602

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene			1.98	1.82		ug/L		92	70 - 130	1	20
Parathion			1.98	2.17		ug/L		110	70 - 130	5	20
Pendimethalin (Penoxaline)			1.98	2.00		ug/L		101	70 - 130	6	20
Phenanthrene			1.98	1.85		ug/L		93	70 - 130	4	20
Propachlor			1.98	1.94		ug/L		98	70 - 130	4	20
Pyrene			1.98	1.99		ug/L		100	70 - 130	5	20
Simazine			1.98	2.00		ug/L		101	70 - 130	6	20
Terbacil			1.98	2.16		ug/L		109	70 - 130	1	20
Terbuthylazine			1.98	2.00		ug/L		101	70 - 130	8	20
Thiobencarb			1.98	2.06		ug/L		104	70 - 130	3	20
trans-Nonachlor			1.98	1.86		ug/L		94	70 - 130	5	20
Trifluralin			1.98	1.82		ug/L		92	70 - 130	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Triphenylphosphate	*111*		*70 - 130*
Perylene-d12	*97*		*70 - 130*

Lab Sample ID: MRL 380-28602/2-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 28602

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
2,4'-DDD			0.0994	0.125		ug/L		126	50 - 150		
2,4'-DDE			0.0994	0.0923	J	ug/L		93	50 - 150		
2,4'-DDT			0.0994	0.0950	J	ug/L		96	50 - 150		
2,4-Dinitrotoluene			0.0994	0.0813	J	ug/L		82	50 - 150		
2,6-Dinitrotoluene			0.0994	0.0858	J	ug/L		86	50 - 150		
4,4'-DDD			0.0994	0.0941	J	ug/L		95	50 - 150		
4,4'-DDE			0.0994	0.0905	J	ug/L		91	50 - 150		
4,4'-DDT			0.0994	0.0944	J	ug/L		95	50 - 150		
Acenaphthene			0.0994	0.0954	J	ug/L		96	50 - 150		
Acenaphthylene			0.0994	0.0828	J	ug/L		83	50 - 150		
Acetochlor			0.0497	0.0422	J	ug/L		85	50 - 150		
Alachlor			0.0497	0.0548		ug/L		110	50 - 150		
alpha-BHC			0.0994	0.0872	J	ug/L		88	50 - 150		
alpha-Chlordane			0.0249	ND		ug/L		88	50 - 150		
Anthracene			0.0199	ND		ug/L		90	50 - 150		
Atrazine			0.0497	ND		ug/L		79	50 - 150		
Benz(a)anthracene			0.0497	0.0429	J	ug/L		86	50 - 150		
Benzo[a]pyrene			0.0199	0.0176	J	ug/L		88	50 - 150		
Benzo[b]fluoranthene			0.0199	0.0175	J	ug/L		88	50 - 150		
Benzo[g,h,i]perylene			0.0497	0.0463	J	ug/L		93	50 - 150		
Benzo[k]fluoranthene			0.0199	0.0203		ug/L		102	50 - 150		
beta-BHC			0.0994	0.0996		ug/L		100	50 - 150		
Bromacil			0.0994	0.0990		ug/L		100	50 - 150		
Butachlor			0.0497	0.0509		ug/L		102	50 - 150		
Butylbenzylphthalate			0.149	0.148	J	ug/L		100	50 - 150		

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

Lab Sample ID: MRL 380-28602/2-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 28602

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Caffeine	0.0497	0.0340	J	ug/L		68	50 - 150
Chlorobenzilate	0.0994	0.0788	J	ug/L		79	50 - 150
Chloroneb	0.0994	0.113		ug/L		114	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0994	0.189	^3+	ug/L		190	50 - 150
Chlorpyrifos	0.0497	0.0447	J	ug/L		90	50 - 150
Chrysene	0.0199	0.0181	J	ug/L		91	50 - 150
delta-BHC	0.0994	0.118		ug/L		119	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.355	J	ug/L		119	50 - 150
Bis(2-ethylhexyl) phthalate	0.596	0.630		ug/L		106	50 - 150
Diazinon (Qualitative)	0.0994	0.0834	J	ug/L		84	15 - 132
Dibenz(a,h)anthracene	0.0497	0.0509		ug/L		102	50 - 150
Diclorvos (DDVP)	0.0497	0.0561		ug/L		113	50 - 150
Dieldrin	0.0994	0.120	J	ug/L		121	50 - 150
Diethylphthalate	0.149	0.150	J	ug/L		100	50 - 150
Dimethoate	0.0994	0.0454	J	ug/L		46	35 - 100
Dimethylphthalate	0.298	0.270	J	ug/L		91	50 - 150
Di-n-butyl phthalate	0.298	0.331	J	ug/L		111	49 - 243
Di-n-octyl phthalate	0.0994	0.0900	J	ug/L		90	50 - 150
Endosulfan I (Alpha)	0.0994	0.128		ug/L		129	50 - 150
Endosulfan II (Beta)	0.0994	0.0898	J	ug/L		90	50 - 150
Endosulfan sulfate	0.0994	0.0895	J	ug/L		90	50 - 150
Endrin	0.0994	0.117		ug/L		117	50 - 150
Endrin aldehyde	0.0994	0.0917	J	ug/L		92	50 - 150
EPTC	0.0994	0.111		ug/L		112	50 - 150
Fluoranthene	0.0497	0.0481	J	ug/L		97	50 - 150
Fluorene	0.0497	ND		ug/L		93	50 - 150
gamma-Chlordane	0.0249	0.0263	J	ug/L		106	50 - 150
Heptachlor	0.0398	0.0439		ug/L		111	50 - 150
Heptachlor epoxide (isomer B)	0.0497	0.0480	J	ug/L		97	50 - 150
Hexachlorobenzene	0.0497	0.0438	J	ug/L		88	50 - 150
Hexachlorocyclopentadiene	0.0497	0.0395	J	ug/L		80	50 - 150
Indeno[1,2,3-cd]pyrene	0.0497	0.0451	J	ug/L		91	50 - 150
Isophorone	0.0994	0.0990	J	ug/L		100	50 - 150
Lindane	0.0398	0.0368	J	ug/L		93	50 - 150
Malathion	0.0994	0.0924	J	ug/L		93	50 - 150
Methoxychlor	0.0994	0.0924	J	ug/L		93	50 - 150
Metolachlor	0.0497	0.0490	J	ug/L		99	50 - 150
Metribuzin	0.0497	0.0463	J	ug/L		93	50 - 150
Molinate	0.0994	0.106		ug/L		106	50 - 150
Naphthalene	0.0994	0.0967	J	ug/L		97	50 - 150
Parathion	0.0994	0.0825	J	ug/L		83	50 - 150
Pendimethalin (Penoxaline)	0.0994	0.0754	J	ug/L		76	50 - 150
Phenanthrene	0.0199	0.0202	J	ug/L		102	50 - 150
Propachlor	0.0497	0.0490	J	ug/L		99	50 - 150
Pyrene	0.0497	0.0435	J	ug/L		87	50 - 150
Simazine	0.0497	0.0479	J	ug/L		96	50 - 150
Terbacil	0.0994	0.128		ug/L		129	50 - 150
Terbuthylazine	0.0994	0.0861	J	ug/L		87	50 - 150
Thiobencarb	0.0994	0.0967	J	ug/L		97	50 - 150

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

Lab Sample ID: MRL 380-28602/2-A
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 28602

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
trans-Nonachlor			0.0249	ND		ug/L		90	50 - 150		
Trifluralin			0.0994	0.0724	J	ug/L		73	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*102*		*70 - 130*
Triphenylphosphate	*101*		*70 - 130*
Perylene-d12	*94*		*70 - 130*

Lab Sample ID: 380-32809-B-1-A MS
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 28602

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4'-DDD	ND		2.00	1.80		ug/L		90	70 - 130		
2,4'-DDE	ND		2.00	1.80		ug/L		90	70 - 130		
2,4'-DDT	ND		2.00	1.97		ug/L		98	70 - 130		
2,4-Dinitrotoluene	ND		2.00	1.90		ug/L		95	70 - 130		
2,6-Dinitrotoluene	ND		2.00	1.94		ug/L		97	70 - 130		
4,4'-DDD	ND		2.00	2.04		ug/L		102	70 - 130		
4,4'-DDE	ND		2.00	1.87		ug/L		93	70 - 130		
4,4'-DDT	ND		2.00	1.98		ug/L		99	70 - 130		
Acenaphthene	ND		2.00	1.86		ug/L		93	70 - 130		
Acenaphthylene	ND		2.00	1.87		ug/L		94	70 - 130		
Acetochlor	ND		2.00	2.09		ug/L		105	70 - 130		
Alachlor	ND		2.00	2.01		ug/L		101	70 - 130		
alpha-BHC	ND		2.00	1.96		ug/L		98	70 - 130		
alpha-Chlordane	ND		2.00	1.92		ug/L		95	70 - 130		
Anthracene	ND	F1	2.00	1.25	F1	ug/L		63	70 - 130		
Atrazine	ND		2.00	1.98		ug/L		99	70 - 130		
Benz(a)anthracene	ND		2.00	1.89		ug/L		95	70 - 130		
Benzo[a]pyrene	ND		2.00	1.72		ug/L		86	70 - 130		
Benzo[b]fluoranthene	ND		2.00	2.03		ug/L		102	70 - 130		
Benzo[g,h,i]perylene	ND		2.00	2.02		ug/L		101	70 - 130		
Benzo[k]fluoranthene	ND		2.00	2.01		ug/L		101	70 - 130		
beta-BHC	ND		2.00	1.97		ug/L		98	70 - 130		
Bromacil	ND		2.00	2.31		ug/L		116	70 - 130		
Butachlor	ND		2.00	2.07		ug/L		103	70 - 130		
Butylbenzylphthalate	ND		2.00	2.16		ug/L		108	70 - 130		
Caffeine	ND		2.00	1.74		ug/L		87	46 - 144		
Chlorobenzilate	ND		2.00	2.02		ug/L		101	70 - 130		
Chloroneb	ND		2.00	1.82		ug/L		91	70 - 130		
Chlorothalonil (Draconil, Bravo)	ND	^3+	2.00	1.89		ug/L		95	70 - 130		
Chlorpyrifos	ND		2.00	1.93		ug/L		97	70 - 130		
Chrysene	ND		2.00	1.84		ug/L		92	70 - 130		
delta-BHC	ND		2.00	1.95		ug/L		98	70 - 130		
Di(2-ethylhexyl)adipate	ND		2.00	2.18		ug/L		100	70 - 130		
Bis(2-ethylhexyl) phthalate	ND		2.00	1.87		ug/L		93	70 - 130		
Diazinon (Qualitative)	ND		2.00	1.90		ug/L		95	15 - 132		

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

Lab Sample ID: 380-32809-B-1-A MS
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 28602

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dibenz(a,h)anthracene	ND		2.00	2.09		ug/L		104	70 - 130
Diclorvos (DDVP)	ND		2.00	2.26		ug/L		113	70 - 130
Dieldrin	ND		2.00	2.20		ug/L		110	70 - 130
Diethylphthalate	ND		2.00	1.97		ug/L		99	70 - 130
Dimethoate	ND		2.00	1.62		ug/L		81	34 - 111
Dimethylphthalate	ND		2.00	1.95		ug/L		97	70 - 130
Di-n-butyl phthalate	ND		4.00	3.91		ug/L		98	70 - 130
Di-n-octyl phthalate	ND		2.00	1.95		ug/L		98	70 - 130
Endosulfan I (Alpha)	ND		2.00	1.78		ug/L		89	70 - 130
Endosulfan II (Beta)	ND		2.00	2.05		ug/L		102	70 - 130
Endosulfan sulfate	ND		2.00	2.17		ug/L		108	70 - 130
Endrin	ND		2.00	2.20		ug/L		110	70 - 130
Endrin aldehyde	ND		2.00	1.89		ug/L		95	70 - 130
EPTC	ND		2.00	2.01		ug/L		101	70 - 130
Fluoranthene	ND		2.00	1.94		ug/L		97	70 - 130
Fluorene	ND		2.00	1.90		ug/L		95	70 - 130
gamma-Chlordane	ND		2.00	1.88		ug/L		93	70 - 130
Heptachlor	ND		2.00	1.88		ug/L		94	70 - 130
Heptachlor epoxide (isomer B)	ND		2.00	1.96		ug/L		98	70 - 130
Hexachlorobenzene	ND		2.00	1.77		ug/L		89	70 - 130
Hexachlorocyclopentadiene	ND		2.00	1.99		ug/L		100	70 - 130
Indeno[1,2,3-cd]pyrene	ND		2.00	2.13		ug/L		107	70 - 130
Isophorone	ND		2.00	2.00		ug/L		100	70 - 130
Lindane	ND		2.00	1.89		ug/L		94	70 - 130
Malathion	ND		2.00	2.15		ug/L		108	70 - 130
Methoxychlor	ND		2.00	2.21		ug/L		111	70 - 130
Metolachlor	ND		2.00	2.15		ug/L		108	70 - 130
Metribuzin	ND		2.00	2.22		ug/L		111	70 - 130
Molinate	ND		2.00	2.13		ug/L		107	70 - 130
Naphthalene	ND		2.00	1.85		ug/L		92	70 - 130
Parathion	ND		2.00	2.18		ug/L		109	70 - 130
Pendimethalin (Penoxaline)	ND		2.00	2.02		ug/L		101	70 - 130
Phenanthrene	ND		2.00	1.85		ug/L		93	70 - 130
Propachlor	ND		2.00	1.94		ug/L		97	70 - 130
Pyrene	ND		2.00	1.96		ug/L		98	70 - 130
Simazine	ND		2.00	2.06		ug/L		103	70 - 130
Terbacil	ND		2.00	2.21		ug/L		111	70 - 130
Terbuthylazine	ND		2.00	2.04		ug/L		102	70 - 130
Thiobencarb	ND		2.00	2.07		ug/L		104	70 - 130
trans-Nonachlor	ND		2.00	1.81		ug/L		91	70 - 130
Trifluralin	ND		2.00	1.91		ug/L		95	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Triphenylphosphate	*111*		*70 - 130*
Perylene-d12	*99*		*70 - 130*

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

Lab Sample ID: 380-32810-Q-1-A DU
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 28602

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
2,4'-DDD	ND		ND		ug/L		NC	20
2,4'-DDE	ND		ND		ug/L		NC	20
2,4'-DDT	ND		ND		ug/L		NC	20
2,4-Dinitrotoluene	ND		ND		ug/L		NC	20
2,6-Dinitrotoluene	ND		ND		ug/L		NC	20
4,4'-DDD	ND		ND		ug/L		NC	20
4,4'-DDE	ND		ND		ug/L		NC	20
4,4'-DDT	ND		ND		ug/L		NC	20
Acenaphthene	ND		ND		ug/L		NC	20
Acenaphthylene	ND		ND		ug/L		NC	20
Acetochlor	ND		ND		ug/L		NC	20
Alachlor	ND		ND		ug/L		NC	20
alpha-BHC	ND		ND		ug/L		NC	20
alpha-Chlordane	ND		ND		ug/L		NC	20
Anthracene	ND		ND		ug/L		NC	20
Atrazine	ND		ND		ug/L		NC	20
Benz(a)anthracene	ND		ND		ug/L		NC	20
Benzo[a]pyrene	ND		ND		ug/L		NC	20
Benzo[b]fluoranthene	ND		ND		ug/L		NC	20
Benzo[g,h,i]perylene	ND		ND		ug/L		NC	20
Benzo[k]fluoranthene	ND		ND		ug/L		NC	20
beta-BHC	ND		ND		ug/L		NC	20
Bromacil	ND		ND		ug/L		NC	20
Butachlor	ND		ND		ug/L		NC	20
Butylbenzylphthalate	ND		ND		ug/L		NC	20
Caffeine	ND		ND		ug/L		NC	20
Chlorobenzilate	ND		ND		ug/L		NC	20
Chloroneb	ND		ND		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	ND	^3+	ND		ug/L		NC	20
Chlorpyrifos	ND		ND		ug/L		NC	20
Chrysene	ND		ND		ug/L		NC	20
delta-BHC	ND		ND		ug/L		NC	20
Di(2-ethylhexyl)adipate	ND		ND		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	ND		ND		ug/L		NC	20
Diazinon (Qualitative)	ND		ND		ug/L		NC	20
Dibenz(a,h)anthracene	ND		ND		ug/L		NC	20
Diclorvos (DDVP)	ND		ND		ug/L		NC	20
Dieldrin	ND		ND		ug/L		NC	20
Diethylphthalate	ND		ND		ug/L		NC	20
Dimethoate	ND		ND		ug/L		NC	20
Dimethylphthalate	6.2		6.06		ug/L		3	20
Di-n-butyl phthalate	ND		ND		ug/L		NC	20
Di-n-octyl phthalate	ND		ND		ug/L		NC	20
Endosulfan I (Alpha)	ND		ND		ug/L		NC	20
Endosulfan II (Beta)	ND		ND		ug/L		NC	20
Endosulfan sulfate	ND		ND		ug/L		NC	20
Endrin	ND		ND		ug/L		NC	20
Endrin aldehyde	ND		ND		ug/L		NC	20

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

Lab Sample ID: 380-32810-Q-1-A DU
Matrix: Water
Analysis Batch: 28759

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 28602

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

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*102*		*70 - 130*
Triphenylphosphate	*119*		*70 - 130*
Perylene-d12	*87*		*70 - 130*

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

Lab Sample ID: 103114-B1
Matrix: BlankMatrix
Analysis Batch: O-40076

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40076_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Acenaphthene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Acenaphthylene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1

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

Lab Sample ID: 103114-B1
Matrix: BlankMatrix
Analysis Batch: O-40076

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40076_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Biphenyl	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Chrysene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Dibenzothiophene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		01/03/23 00:00	01/08/23 19:50	1
Fluoranthene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Fluorene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Naphthalene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Perylene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Phenanthrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1
Pyrene	ND		0.005	0.001	µg/L		01/03/23 00:00	01/08/23 19:50	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*89*		*27 - 133*	*01/03/23 00:00*	*01/08/23 19:50*	*1*
(d10-Phenanthrene)	*92*		*43 - 129*	*01/03/23 00:00*	*01/08/23 19:50*	*1*
(d12-Chrysene)	*100*		*52 - 144*	*01/03/23 00:00*	*01/08/23 19:50*	*1*
(d12-Perylene)	*98*		*36 - 161*	*01/03/23 00:00*	*01/08/23 19:50*	*1*
(d8-Naphthalene)	*84*		*25 - 125*	*01/03/23 00:00*	*01/08/23 19:50*	*1*

Lab Sample ID: 103114-BS1
Matrix: BlankMatrix
Analysis Batch: O-40076

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40076_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.459		µg/L		92	31 - 128
1-Methylphenanthrene	0.5	0.443		µg/L		89	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.501		µg/L		100	55 - 122
2,6-Dimethylnaphthalene	0.5	0.487		µg/L		97	48 - 120
2-Methylnaphthalene	1.5	1.43		µg/L		95	47 - 130
Acenaphthene	1.5	1.51		µg/L		101	53 - 131
Acenaphthylene	1.5	1.52		µg/L		101	43 - 140
Anthracene	1.5	1.53		µg/L		102	58 - 135
Benz[a]anthracene	1.5	1.6		µg/L		107	55 - 145
Benzo[a]pyrene	1.5	1.56		µg/L		104	51 - 143
Benzo[b]fluoranthene	1.5	1.68		µg/L		112	46 - 165
Benzo[e]pyrene	0.5	0.513		µg/L		103	42 - 152
Benzo[g,h,i]perylene	1.5	1.59		µg/L		106	63 - 133
Benzo[k]fluoranthene	1.5	1.51		µg/L		101	56 - 145
Biphenyl	0.5	0.524		µg/L		105	56 - 119

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

Lab Sample ID: 103114-BS1
Matrix: BlankMatrix
Analysis Batch: O-40076

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40076_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chrysene			1.5	1.52		µg/L		101	56 - 141		
Dibenz[a,h]anthracene			1.5	1.6		µg/L		107	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.46		µg/L		92	50 - 150		
Dibenzothiophene			0.5	0.454		µg/L		91	46 - 126		
Disalicylidenepropanediamine			50	48.6		µg/L		97	50 - 150		
Fluoranthene			1.5	1.69		µg/L		113	60 - 146		
Fluorene			1.5	1.59		µg/L		106	58 - 131		
Indeno[1,2,3-cd]pyrene			1.5	1.56		µg/L		104	50 - 151		
Naphthalene			1.5	1.42		µg/L		95	41 - 126		
Perylene			0.5	0.468		µg/L		94	48 - 141		
Phenanthrene			1.5	1.57		µg/L		105	67 - 127		
Pyrene			1.5	1.62		µg/L		108	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*90*		*27 - 133*
(d10-Phenanthrene)	*93*		*43 - 129*
(d12-Chrysene)	*97*		*52 - 144*
(d12-Perylene)	*94*		*36 - 161*
(d8-Naphthalene)	*83*		*25 - 125*

Lab Sample ID: 103114-BS2
Matrix: BlankMatrix
Analysis Batch: O-40076

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40076_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.465		µg/L		93	31 - 128	1	30
1-Methylphenanthrene			0.5	0.439		µg/L		88	66 - 127	1	30
2,3,5-Trimethylnaphthalene			0.5	0.494		µg/L		99	55 - 122	1	30
2,6-Dimethylnaphthalene			0.5	0.479		µg/L		96	48 - 120	1	30
2-Methylnaphthalene			1.5	1.39		µg/L		93	47 - 130	2	30
Acenaphthene			1.5	1.47		µg/L		98	53 - 131	3	30
Acenaphthylene			1.5	1.5		µg/L		100	43 - 140	1	30
Anthracene			1.5	1.53		µg/L		102	58 - 135	0	30
Benz[a]anthracene			1.5	1.56		µg/L		104	55 - 145	3	30
Benzo[a]pyrene			1.5	1.51		µg/L		101	51 - 143	3	30
Benzo[b]fluoranthene			1.5	1.61		µg/L		107	46 - 165	5	30
Benzo[e]pyrene			0.5	0.498		µg/L		100	42 - 152	3	30
Benzo[g,h,i]perylene			1.5	1.57		µg/L		105	63 - 133	1	30
Benzo[k]fluoranthene			1.5	1.48		µg/L		99	56 - 145	2	30
Biphenyl			0.5	0.514		µg/L		103	56 - 119	2	30
Chrysene			1.5	1.47		µg/L		98	56 - 141	3	30
Dibenz[a,h]anthracene			1.5	1.53		µg/L		102	55 - 150	5	30
Dibenzo[a,l]pyrene			0.5	0.507		µg/L		101	50 - 150	9	30
Dibenzothiophene			0.5	0.456		µg/L		91	46 - 126	0	30
Disalicylidenepropanediamine			50	52		µg/L		104	50 - 150	7	30
Fluoranthene			1.5	1.68		µg/L		112	60 - 146	1	30
Fluorene			1.5	1.58		µg/L		105	58 - 131	1	30
Indeno[1,2,3-cd]pyrene			1.5	1.59		µg/L		106	50 - 151	2	30

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

Lab Sample ID: 103114-BS2
Matrix: BlankMatrix
Analysis Batch: O-40076

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40076_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene			1.5	1.38		µg/L		92	41 - 126	3	30
Perylene			0.5	0.448		µg/L		90	48 - 141	4	30
Phenanthrene			1.5	1.55		µg/L		103	67 - 127	1	30
Pyrene			1.5	1.62		µg/L		108	54 - 156	0	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*89*		*27 - 133*
(d10-Phenanthrene)	*93*		*43 - 129*
(d12-Chrysene)	*95*		*52 - 144*
(d12-Perylene)	*99*		*36 - 161*
(d8-Naphthalene)	*82*		*25 - 125*

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

Lab Sample ID: 22VGH7A01B
Matrix: WATER
Analysis Batch: 23VGH7A01

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	0.020		mg/L			01/03/23 13:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE					*01/03/23 13:00*	*1*

Lab Sample ID: 22VGH7A01L
Matrix: WATER
Analysis Batch: 23VGH7A01

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE			0.500	0.453		mg/L		91	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOFLUOROBENZENE	*118*		*70 - 130*

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

Lab Sample ID: 22DSA006WB
Matrix: WATER
Analysis Batch: 23DSA006W

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			01/06/23 03:32	1
JP5	ND	U	0.050		mg/L			01/06/23 03:32	1
JP8	ND	U	0.050		mg/L			01/06/23 03:32	1
MOTOR OIL	ND	U	0.050		mg/L			01/06/23 03:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE					*01/06/23 03:32*	*1*

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

Lab Sample ID: 22DSA006WB
Matrix: WATER
Analysis Batch: 23DSA006W

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
HEXACOSANE					01/06/23 03:32	1

Lab Sample ID: 22DSA006WL
Matrix: WATER
Analysis Batch: 23DSA006W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
DIESEL			2.50	2.64		mg/L		106	50 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	107		60 - 130
HEXACOSANE	122		60 - 130

Lab Sample ID: 22J5A006WL
Matrix: WATER
Analysis Batch: 23DSA006W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP5			2.50	2.47		mg/L		99	30 - 160		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	93		60 - 130
HEXACOSANE	117		60 - 130

Lab Sample ID: 22J8A006WL
Matrix: WATER
Analysis Batch: 23DSA006W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP8			2.50	2.54		mg/L		102	30 - 160		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	97		60 - 130
HEXACOSANE	116		60 - 130

GC/MS Semi VOA

Prep Batch: 28602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32811-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
MB 380-28602/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-28602/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-28602/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-28602/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-32809-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-32810-Q-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 28759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32811-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	28602
MB 380-28602/1-A	Method Blank	Total/NA	Water	525.2	28602
LCS 380-28602/3-A	Lab Control Sample	Total/NA	Water	525.2	28602
LCSD 380-28602/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	28602
MRL 380-28602/2-A	Lab Control Sample	Total/NA	Water	525.2	28602
380-32809-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	28602
380-32810-Q-1-A DU	Duplicate	Total/NA	Water	525.2	28602

Subcontract

Analysis Batch: O-40076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32811-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40076_P
103114-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40076_P
103114-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40076_P
103114-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40076_P

Analysis Batch: 23DSA006W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32811-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
22DSA006WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
22DSA006WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
22J5A006WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
22J8A006WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	

Analysis Batch: 23VGH7A01

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32811-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

Subcontract (Continued)

Analysis Batch: 23VGH7A01 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32811-2	TB AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
22VGH7A01B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22VGH7A01L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40076_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32811-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
103114-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
103114-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
103114-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-32811-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-32811-1

Date Collected: 12/27/22 10:30

Matrix: Drinking Water

Date Received: 12/29/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			28602	OTM3	EA MON	01/03/23 07:51
Total/NA	Analysis	525.2		1	28759	Q8LA	EA MON	01/04/23 16:05
Total/NA	Prep	EPA_625		1	O-40076_P			01/03/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40076	YC		01/09/23 02:48
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7A01	SCerva		01/03/23 22:20
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSA006W	SDees		01/06/23 06:16

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-32811-2

Date Collected: 12/27/22 10:30

Matrix: Drinking Water

Date Received: 12/29/22 10:10

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	23VGH7A01	SCerva		01/03/23 22:57

Laboratory References:

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

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

Accreditation/Certification Summary

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

Job ID: 380-32811-1

Laboratory: Eurofins Eaton Monrovia

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-08-23

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

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

Laboratory: Eurofins Eaton Monrovia (Continued)

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

Authority	Program	Identification Number	Expiration Date

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	Isophorone
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbuthylazine
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: 380-32811-1

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

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

Sample Summary

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

Job ID: 380-32811-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-32811-1	AIEA GULCH WELLS PUMP 2	Drinking Water	12/27/22 10:30	12/29/22 10:10	HI0000331
380-32811-2	TB AIEA GULCH WELLS PUMP 2	Drinking Water	12/27/22 10:30	12/29/22 10:10	

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

Date: 01-20-2023
EMAX Batch No.: 22L318

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-32811

Enclosed is the Laboratory report for samples received on 12/30/22.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-32811-1	L318-01	12/27/22	WATER	TPH GASOLINE TPH
380-32811-2	L318-02	12/27/22	WATER	TPH GASOLINE

The results are summarized on the following pages.

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

Sincerely yours,

Caspar J. Pang
Laboratory Director

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

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

221318

eurofins | Environment Testing

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

Chain of Custody Record

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

Sampler:
Phone:
Lab PM: Arada, Rachelle
E-Mail: Rachelle.Arada@et.eurofinsus.com
Carrier Tracking No(s):
State of Origin: Hawaii
COC No: 380-32259.1
Page: Page 1 of 1
Job #: 380-32811-1
Due Date Requested: 1/13/2023
TAT Requested (days):
PO #:
WO #:
Project #: 38001111
SSOW#:
Accreditations Required (See note): State - Hawaii

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8015 Gas (Purgeable) LL (EAL))/ 8015 Gas (Purgeable) LL (EAL)	SUB (8015 LL DRO/MRO/JP5/JP8)/ 8015 LL DRO/MRO/JP5/JP8	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
AIEA GULCH WELLS PUMP 2 (380-32811-1)	12/27/22	10:30 Hawaiian		Water			X	X	6	See Attached Instructions
TB AIEA GULCH WELLS PUMP 2 (380-32811-2)	12/27/22	10:30 Hawaiian		Water			X		2	See Attached Instructions

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

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Special Instructions/QC Requirements:

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

	Date/Time	Company		Date/Time	Company
Relinquished by:	12-30-22 1020	EAL	Received by:	12/30	
Relinquished by:	12/30/22 1530		Received by:		
Relinquished by:			Received by: DN 12/30/22 @ 1530		

Custody Seals Intact: Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: Temp - 1.6/1.4 CF: -0.2

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 221318
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient Diem M
☐ EMAX Courier ☑ Client Delivery		Date 12/30/22 Time 15:30

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☐ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging correction factor -0.2	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 1.6/1.4 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* _____	*B - S/N* 210760237	*C - S/N* _____	*D - S/N* 210760272	

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	5,6	D2	tPS/JPO not indicated on label	R8
2	7,8	D7	two dates on label - 12/19/22* & 12/27/22	R1

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

1/3/23 1/3/23 NB

NOTES/OBSERVATIONS: * out of HT if collected 12/19/22.

SAMPLE MATRIX IS DRINKING WATER? ☐ YES ☐ NO

☐ Continue to next page.

LEGEND:

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

Code	Description-Sample Management
R1	Proceed as indicated in ☑ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	Informed Client
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling Jocelyne Colin-Ramos Date 01/03/23 1/3/23

SRF _____ Date 1/3/23

PM NB Date 1/3/23

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-32811

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

SDG#: 22L318

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-32811

SDG : 22L318

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

A total of two(2) water samples were received on 12/30/22 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VGH7A01B - 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. VGH7A01L/VGH7A01C 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 L316-01M/L316-01S. 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 : 380-32811

SDG NO. : 22L318
Instrument ID : H7

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VGH7A01B	1	NA	01/03/2313:00	01/03/2313:00	AA03005A	AA03004A	23VGH7A01	Method Blank
LCS1W	VGH7A01L	1	NA	01/03/2313:37	01/03/2313:37	AA03006A	AA03004A	23VGH7A01	Lab Control Sample (LCS)
LCD1W	VGH7A01C	1	NA	01/03/2314:15	01/03/2314:15	AA03007A	AA03004A	23VGH7A01	LCS Duplicate
380-32811-1	L318-01	1	NA	01/03/2322:20	01/03/2322:20	AA03020A	AA03013A	23VGH7A01	Field Sample
380-32811-2	L318-02	1	NA	01/03/2322:57	01/03/2322:57	AA03021A	AA03013A	23VGH7A01	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/27/22 10:30
Project	: 380-32811	Date Received:	12/30/22
Batch No.	: 22L318	Date Extracted:	01/03/23 22:20
Sample ID	: 380-32811-1	Date Analyzed:	01/03/23 22:20
Lab Samp ID:	L318-01	Dilution Factor:	1
Lab File ID:	AA03020A	Matrix:	WATER
Ext Btch ID:	23VGH7A01	% Moisture:	NA
Calib. Ref.:	AA03013A	Instrument ID:	H7

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0355	0.0400	89	60-140

Notes:

Parameter	H-C Range
Gasoline	C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/27/22 10:30
Project	: 380-32811	Date Received:	12/30/22
Batch No.	: 22L318	Date Extracted:	01/03/23 22:57
Sample ID	: 380-32811-2	Date Analyzed:	01/03/23 22:57
Lab Samp ID:	L318-02	Dilution Factor:	1
Lab File ID:	AA03021A	Matrix:	WATER
Ext Btch ID:	23VGH7A01	% Moisture:	NA
Calib. Ref.:	AA03013A	Instrument ID:	H7

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromofluorobenzene	0.0357	0.0400	89	60-140

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

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

QC SUMMARIES

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/03/23 13:00
Project	: 380-32811	Date Received:	01/03/23
Batch No.	: 22L318	Date Extracted:	01/03/23 13:00
Sample ID	: MBLK1W	Date Analyzed:	01/03/23 13:00
Lab Samp ID:	VGH7A01B	Dilution Factor:	1
Lab File ID:	AA03005A	Matrix:	WATER
Ext Btch ID:	23VGH7A01	% Moisture:	NA
Calib. Ref.:	AA03004A	Instrument ID:	H7

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0323	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 : 380-32811
BATCH NO. : 22L318
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VGH7A01B	VGH7A01L	VGH7A01C
LAB FILE ID	: AA03005A	AA03006A	AA03007A
DATE PREPARED	: 01/03/23 13:00	01/03/23 13:37	01/03/23 14:15
DATE ANALYZED	: 01/03/23 13:00	01/03/23 13:37	01/03/23 14:15
PREP BATCH	: 23VGH7A01	23VGH7A01	23VGH7A01
CALIBRATION REF	: AA03004A	AA03004A	AA03004A

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	0.453	91	0.500	0.419	84	8	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0470	118	0.0400	0.0408	102	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 : 380-32804
BATCH NO. : 22L316
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 380-32804-1	380-32804-1MS	380-32804-1MSD
LAB SAMPLE ID	: L316-01	L316-01M	L316-01S
LAB FILE ID	: AA03014A	AA03015A	AA03016A
DATE PREPARED	: 01/03/23 18:36	01/03/23 19:13	01/03/23 19:51
DATE ANALYZED	: 01/03/23 18:36	01/03/23 19:13	01/03/23 19:51
PREP BATCH	: 23VGH7A01	23VGH7A01	23VGH7A01
CALIBRATION REF	: AA03013A	AA03013A	AA03013A

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	0.408	82	0.500	0.458	92	12	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0406	102	0.0400	0.0431	108	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-32811

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 22L318

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-32811

SDG : 22L318

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 12/30/22 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSA006WB - 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. DSA006WL/DSA006WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

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

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-32811

SDG : 22L318

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 12/30/22 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. DSA006WB - 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. J5A006WL/J5A006WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

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

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-32811

SDG : 22L318

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 12/30/22 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. DSA006WB - 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. J8A006WL/J8A006WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

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

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-32811

SDG NO. : 22L318
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSA006WB	1	NA	01/06/2303:32	01/04/2315:00	LA05050A	LA05047A	23DSA006W	Method Blank
LCS1W	DSA006WL	1	NA	01/06/2303:50	01/04/2315:00	LA05051A	LA05047A	23DSA006W	Lab Control Sample (LCS)
LCD1W	DSA006WC	1	NA	01/06/2304:08	01/04/2315:00	LA05052A	LA05047A	23DSA006W	LCS Duplicate
380-32811-1	L318-01	1	NA	01/06/2306:16	01/04/2315:00	LA05059A	LA05047A	23DSA006W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-32811

SDG NO. : 22L318
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSA006WB	1	NA	01/06/2303:32	01/04/2315:00	LA05050A	LA05048A	23DSA006W	Method Blank
LCS1W	J5A006WL	1	NA	01/06/2304:27	01/04/2315:00	LA05053A	LA05048A	23DSA006W	Lab Control Sample (LCS)
LCD1W	J5A006WC	1	NA	01/06/2304:45	01/04/2315:00	LA05054A	LA05048A	23DSA006W	LCS Duplicate
380-32811-1	L318-01	1	NA	01/06/2306:16	01/04/2315:00	LA05059A	LA05048A	23DSA006W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-32811

SDG NO. : 22L318
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSA006WB	1	NA	01/06/2303:32	01/04/2315:00	LA05050A	LA05049A	23DSA006W	Method Blank
LCS1W	J8A006WL	1	NA	01/06/2305:03	01/04/2315:00	LA05055A	LA05049A	23DSA006W	Lab Control Sample (LCS)
LCD1W	J8A006WC	1	NA	01/06/2305:22	01/04/2315:00	LA05056A	LA05049A	23DSA006W	LCS Duplicate
380-32811-1	L318-01	1	NA	01/06/2306:16	01/04/2315:00	LA05059A	LA05049A	23DSA006W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/27/22 10:30
Project	: 380-32811	Date Received:	12/30/22
Batch No.	: 22L318	Date Extracted:	01/04/23 15:00
Sample ID	: 380-32811-1	Date Analyzed:	01/06/23 06:16
Lab Samp ID:	22L318-01	Dilution Factor:	1
Lab File ID:	LA05059A	Matrix:	WATER
Ext Btch ID:	23DSA006W	% Moisture:	NA
Calib. Ref.:	LA05047A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.024	0.012
Motor Oil	ND	0.048	0.024

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.407	0.475	86	60-130
Hexacosane	0.140	0.119	118	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	: 1050ml	Final Volume	: 5ml
Prepared by	: RVilla/POreto	Analyzed by	: SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/27/22 10:30
Project	: 380-32811	Date Received:	12/30/22
Batch No.	: 22L318	Date Extracted:	01/04/23 15:00
Sample ID	: 380-32811-1	Date Analyzed:	01/06/23 06:16
Lab Samp ID:	22L318-01	Dilution Factor:	1
Lab File ID:	LA05059A	Matrix:	WATER
Ext Btch ID:	23DSA006W	% Moisture:	NA
Calib. Ref.:	LA05048A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.048	0.024

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.407	0.475	86	60-130
Hexacosane	0.140	0.119	118	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 : 1050ml Final Volume : 5ml
Prepared by : RVilla/POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/27/22 10:30
Project	: 380-32811	Date Received:	12/30/22
Batch No.	: 22L318	Date Extracted:	01/04/23 15:00
Sample ID	: 380-32811-1	Date Analyzed:	01/06/23 06:16
Lab Samp ID:	22L318-01	Dilution Factor:	1
Lab File ID:	LA05059A	Matrix:	WATER
Ext Btch ID:	23DSA006W	% Moisture:	NA
Calib. Ref.:	LA05049A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.048	0.024

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.407	0.475	86	60-130
Hexacosane	0.140	0.119	118	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 : 1050ml Final Volume : 5ml
Prepared by : RVilla/POreto Analyzed by : SDeeso

QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/04/23 15:00
Project	: 380-32811	Date Received:	01/04/23
Batch No.	: 22L318	Date Extracted:	01/04/23 15:00
Sample ID	: MBLK1W	Date Analyzed:	01/06/23 03:32
Lab Samp ID:	DSA006WB	Dilution Factor:	1
Lab File ID:	LA05050A	Matrix:	WATER
Ext Btch ID:	23DSA006W	% Moisture:	NA
Calib. Ref.:	LA05047A	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	0.415	0.500	83	60-130
Hexacosane	0.146	0.125	117	60-130

Notes:

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32811
BATCH NO. : 22L318
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSA006WB	DSA006WL	DSA006WC
LAB FILE ID	: LA05050A	LA05051A	LA05052A
DATE PREPARED	: 01/04/23 15:00	01/04/23 15:00	01/04/23 15:00
DATE ANALYZED	: 01/06/23 03:32	01/06/23 03:50	01/06/23 04:08
PREP BATCH	: 23DSA006W	23DSA006W	23DSA006W
CALIBRATION REF:	LA05047A	LA05047A	LA05047A

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	2.64	106	2.50	2.81	112	6	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.533	107	0.500	0.492	98	60-130
Hexacosane	0.125	0.153	122	0.125	0.143	114	60-130

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

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/04/23 15:00
Project	: 380-32811	Date Received:	01/04/23
Batch No.	: 22L318	Date Extracted:	01/04/23 15:00
Sample ID	: MBLK1W	Date Analyzed:	01/06/23 03:32
Lab Samp ID:	DSA006WB	Dilution Factor:	1
Lab File ID:	LA05050A	Matrix:	WATER
Ext Btch ID:	23DSA006W	% Moisture:	NA
Calib. Ref.:	LA05048A	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	0.415	0.500	83	60-130
Hexacosane	0.146	0.125	117	60-130

Notes:
RL : Reporting Limit

Parameter	H-C Range
JP5	C8-C18

Reported ND at RL quantitated per pattern recognition.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32811
BATCH NO. : 22L318
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSA006WB	J5A006WL	J5A006WC
LAB FILE ID	: LA05050A	LA05053A	LA05054A
DATE PREPARED	: 01/04/23 15:00	01/04/23 15:00	01/04/23 15:00
DATE ANALYZED	: 01/06/23 03:32	01/06/23 04:27	01/06/23 04:45
PREP BATCH	: 23DSA006W	23DSA006W	23DSA006W
CALIBRATION REF	: LA05048A	LA05048A	LA05048A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.50	2.47	99	2.50	2.04	82	19	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.467	93	0.500	0.396	79	60-130
Hexacosane	0.125	0.146	117	0.125	0.137	110	60-130

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

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/04/23 15:00
Project	: 380-32811	Date Received:	01/04/23
Batch No.	: 22L318	Date Extracted:	01/04/23 15:00
Sample ID	: MBLK1W	Date Analyzed:	01/06/23 03:32
Lab Samp ID:	DSA006WB	Dilution Factor:	1
Lab File ID:	LA05050A	Matrix:	WATER
Ext Btch ID:	23DSA006W	% Moisture:	NA
Calib. Ref.:	LA05049A	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	0.415	0.500	83	60-130
Hexacosane	0.146	0.125	117	60-130

Notes:
RL : Reporting Limit

Parameter	H-C Range
JP8	C8-C18

Reported ND at RL quantitated per pattern recognition.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32811
BATCH NO. : 22L318
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSA006WB	J8A006WL	J8A006WC
LAB FILE ID	: LA05050A	LA05055A	LA05056A
DATE PREPARED	: 01/04/23 15:00	01/04/23 15:00	01/04/23 15:00
DATE ANALYZED	: 01/06/23 03:32	01/06/23 05:03	01/06/23 05:22
PREP BATCH	: 23DSA006W	23DSA006W	23DSA006W
CALIBRATION REF:	LA05049A	LA05049A	LA05049A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.50	2.54	102	2.50	2.13	85	18	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.487	97	0.500	0.488	98	60-130
Hexacosane	0.125	0.145	116	0.125	0.138	110	60-130

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

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

January 10, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-32811-1
Physis Project ID: 1407003-354

Dear Rosalynn,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 12/30/2022. A total of 1 sample was received for analysis in accordance with the attached chain of custody (COC). Per the COC, the sample was analyzed for:

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

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

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

Regards,

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

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-354

RED-HILL Project # 38001111 Job # 380-32811-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
103115	AIEA GULCH WELLS PUMP 2	380-32811-1	12/27/2022	10:30	Samplewater	Not Specified

1904 E. Wright Circle Anaheim, CA 92806 (714) 602-5320 fax (714) 602-5321 www.physislabs.com CA ELAP #2769

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

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QUALITY ASSURANCE SUMMARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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PHYSIS QUALIFIER CODES

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

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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.

ANALYTICAL REPORT

PHYSIS Project ID: 1407003-354
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32811-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 103115-R1	**AIEA GULCH WELLS PUMP 2 380-3**	**Matrix: Samplewater**					**Sampled: 27-Dec-22 10:30**			**Received: 30-Dec-22**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40076	03-Jan-23	09-Jan-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 103115-R1	**AIEA GULCH WELLS PUMP 2 380-3**	**Matrix: Samplewater**					**Sampled: 27-Dec-22 10:30**			**Received: 30-Dec-22**	
(d10-Acenaphthene)	EPA 625.1	% Recovery	87	1			Total		O-40076	03-Jan-23	09-Jan-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	92	1			Total		O-40076	03-Jan-23	09-Jan-23
(d12-Chrysene)	EPA 625.1	% Recovery	96	1			Total		O-40076	03-Jan-23	09-Jan-23
(d12-Perylene)	EPA 625.1	% Recovery	88	1			Total		O-40076	03-Jan-23	09-Jan-23
(d8-Naphthalene)	EPA 625.1	% Recovery	77	1			Total		O-40076	03-Jan-23	09-Jan-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23

PHYSIS Project ID: 1407003-354
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32811-1

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40076	03-Jan-23	09-Jan-23

QUALITY CONTROL REPORT

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 103114-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40076		Prepared: 03-Jan-23					Analyzed: 08-Jan-23	
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 103114-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40076		Prepared: 03-Jan-23					Analyzed: 08-Jan-23	
Disalicylidenepropanediamin	Total	48.6	1	0.05	0.1	µg/L	50	0	97	50 - 150%	PASS			
Sample ID: 103114-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40076		Prepared: 03-Jan-23					Analyzed: 08-Jan-23	
Disalicylidenepropanediamin	Total	52	1	0.05	0.1	µg/L	50	0	104	50 - 150%	PASS	7	30 PASS	

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 103114-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
	Method: EPA 625.1					Batch ID: O-40076		Prepared: 03-Jan-23				Analyzed: 08-Jan-23	
(d10-Acenaphthene)	Total	89	1			% Recovery	100	89		27 - 133%		PASS	
(d10-Phenanthrene)	Total	92	1			% Recovery	100	92		43 - 129%		PASS	
(d12-Chrysene)	Total	100	1			% Recovery	100	100		52 - 144%		PASS	
(d12-Perylene)	Total	98	1			% Recovery	100	98		36 - 161%		PASS	
(d8-Naphthalene)	Total	84	1			% Recovery	100	84		25 - 125%		PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L							
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L							
Anthracene	Total	ND	1	0.001	0.005	µg/L							
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L							
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L							
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Biphenyl	Total	ND	1	0.001	0.005	µg/L							
Chrysene	Total	ND	1	0.001	0.005	µg/L							
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L							
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L							
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L							

PHYSIS Project ID: 1407003-354
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32811-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 103114-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
		Method: EPA 625.1				Batch ID: O-40076		Prepared: 03-Jan-23				Analyzed: 08-Jan-23	
(d10-Acenaphthene)	Total	90	1			% Recovery	100	0	90	27 - 133%	PASS		
(d10-Phenanthrene)	Total	93	1			% Recovery	100	0	93	43 - 129%	PASS		
(d12-Chrysene)	Total	97	1			% Recovery	100	0	97	52 - 144%	PASS		
(d12-Perylene)	Total	94	1			% Recovery	100	0	94	36 - 161%	PASS		
(d8-Naphthalene)	Total	83	1			% Recovery	100	0	83	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.459	1	0.001	0.005	µg/L	0.5	0	92	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.443	1	0.001	0.005	µg/L	0.5	0	89	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.501	1	0.001	0.005	µg/L	0.5	0	100	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	48 - 120%	PASS		
2-Methylnaphthalene	Total	1.43	1	0.001	0.005	µg/L	1.5	0	95	47 - 130%	PASS		
Acenaphthene	Total	1.51	1	0.001	0.005	µg/L	1.5	0	101	53 - 131%	PASS		
Acenaphthylene	Total	1.52	1	0.001	0.005	µg/L	1.5	0	101	43 - 140%	PASS		
Anthracene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	58 - 135%	PASS		
Benz[a]anthracene	Total	1.6	1	0.001	0.005	µg/L	1.5	0	107	55 - 145%	PASS		
Benzo[a]pyrene	Total	1.56	1	0.001	0.005	µg/L	1.5	0	104	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	1.68	1	0.001	0.005	µg/L	1.5	0	112	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	1.59	1	0.001	0.005	µg/L	1.5	0	106	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	1.51	1	0.001	0.005	µg/L	1.5	0	101	56 - 145%	PASS		
Biphenyl	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	56 - 119%	PASS		
Chrysene	Total	1.52	1	0.001	0.005	µg/L	1.5	0	101	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	1.6	1	0.001	0.005	µg/L	1.5	0	107	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	50 - 150%	PASS		
Dibenzothiophene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	46 - 126%	PASS		

PHYSIS Project ID: 1407003-354
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32811-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Fluoranthene	Total	1.69	1	0.001	0.005	µg/L	1.5	0	113	60 - 146%	PASS			
Fluorene	Total	1.59	1	0.001	0.005	µg/L	1.5	0	106	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	1.56	1	0.001	0.005	µg/L	1.5	0	104	50 - 151%	PASS			
Naphthalene	Total	1.42	1	0.001	0.005	µg/L	1.5	0	95	41 - 126%	PASS			
Perylene	Total	0.468	1	0.001	0.005	µg/L	0.5	0	94	48 - 141%	PASS			
Phenanthrene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	67 - 127%	PASS			
Pyrene	Total	1.62	1	0.001	0.005	µg/L	1.5	0	108	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Sample ID: 103114-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**		
		Method: EPA 625.1				Batch ID: O-40076		Prepared: 03-Jan-23					Analyzed: 08-Jan-23		
(d10-Acenaphthene)	Total	89	1			% Recovery	100	0	89	27 - 133%	PASS	1	30	PASS	
(d10-Phenanthrene)	Total	93	1			% Recovery	100	0	93	43 - 129%	PASS	0	30	PASS	
(d12-Chrysene)	Total	95	1			% Recovery	100	0	95	52 - 144%	PASS	2	30	PASS	
(d12-Perylene)	Total	99	1			% Recovery	100	0	99	36 - 161%	PASS	5	30	PASS	
(d8-Naphthalene)	Total	82	1			% Recovery	100	0	82	25 - 125%	PASS	1	30	PASS	
1-Methylnaphthalene	Total	0.465	1	0.001	0.005	µg/L	0.5	0	93	31 - 128%	PASS	1	30	PASS	
1-Methylphenanthrene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	66 - 127%	PASS	1	30	PASS	
2,3,5-Trimethylnaphthalene	Total	0.494	1	0.001	0.005	µg/L	0.5	0	99	55 - 122%	PASS	1	30	PASS	
2,6-Dimethylnaphthalene	Total	0.479	1	0.001	0.005	µg/L	0.5	0	96	48 - 120%	PASS	1	30	PASS	
2-Methylnaphthalene	Total	1.39	1	0.001	0.005	µg/L	1.5	0	93	47 - 130%	PASS	2	30	PASS	
Acenaphthene	Total	1.47	1	0.001	0.005	µg/L	1.5	0	98	53 - 131%	PASS	3	30	PASS	
Acenaphthylene	Total	1.5	1	0.001	0.005	µg/L	1.5	0	100	43 - 140%	PASS	1	30	PASS	
Anthracene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	58 - 135%	PASS	0	30	PASS	
Benz[a]anthracene	Total	1.56	1	0.001	0.005	µg/L	1.5	0	104	55 - 145%	PASS	3	30	PASS	
Benzo[a]pyrene	Total	1.51	1	0.001	0.005	µg/L	1.5	0	101	51 - 143%	PASS	3	30	PASS	
Benzo[b]fluoranthene	Total	1.61	1	0.001	0.005	µg/L	1.5	0	107	46 - 165%	PASS	5	30	PASS	
Benzo[e]pyrene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	42 - 152%	PASS	3	30	PASS	
Benzo[g,h,i]perylene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	63 - 133%	PASS	1	30	PASS	
Benzo[k]fluoranthene	Total	1.48	1	0.001	0.005	µg/L	1.5	0	99	56 - 145%	PASS	2	30	PASS	
Biphenyl	Total	0.514	1	0.001	0.005	µg/L	0.5	0	103	56 - 119%	PASS	2	30	PASS	
Chrysene	Total	1.47	1	0.001	0.005	µg/L	1.5	0	98	56 - 141%	PASS	3	30	PASS	
Dibenz[a,h]anthracene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	55 - 150%	PASS	5	30	PASS	
Dibenzo[a,l]pyrene	Total	0.507	1	0.001	0.005	µg/L	0.5	0	101	50 - 150%	PASS	9	30	PASS	
Dibenzothiophene	Total	0.456	1	0.001	0.005	µg/L	0.5	0	91	46 - 126%	PASS	0	30	PASS	

PHYSIS Project ID: 1407003-354
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32811-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Fluoranthene	Total	1.68	1	0.001	0.005	µg/L	1.5	0	112	60 - 146%	PASS	1	30	PASS	
Fluorene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	58 - 131%	PASS	1	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	1.59	1	0.001	0.005	µg/L	1.5	0	106	50 - 151%	PASS	2	30	PASS	
Naphthalene	Total	1.38	1	0.001	0.005	µg/L	1.5	0	92	41 - 126%	PASS	3	30	PASS	
Perylene	Total	0.448	1	0.001	0.005	µg/L	0.5	0	90	48 - 141%	PASS	4	30	PASS	
Phenanthrene	Total	1.55	1	0.001	0.005	µg/L	1.5	0	103	67 - 127%	PASS	1	30	PASS	
Pyrene	Total	1.62	1	0.001	0.005	µg/L	1.5	0	108	54 - 156%	PASS	0	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 103115

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
36.1291	5.1410	1111	Anthracene-D10-	1719-06-8	95
10.8943	2.8272	611	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	91

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_40076

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
36.1378	5.7449	1111	Anthracene-D10	1517-22-2	91
10.8967	3.3862	655	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	89

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-32258.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-32811-1
Address: 1904 Wright Circle, ,	Due Date Requested: 1/13/2023			
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
AIEA GULCH WELLS PUMP 2 (380-32811-1)	12/27/22	10:30 Hawaiian		Water			X	2	See Attached Instructions

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

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chyn Brock	12-30-22 1030	EOA	12:30		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/1/23 1335				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			Sierra Whitacre	1/3/22 1335	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/14/2023

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

PHYSIS

Project Iteration ID: 1407003-354
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111 Job # 380-32811-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: SW
2. Date Received: 12/30
3. Time Received: 1335
4. Client Name: Eurofins
5. Courier Information: (Please circle)
   - Client
   - UPS
   - Area Fast
   - DRS
   - FedEx
   - GSO/GLS
   - Ontrac
   - PAMS
   - PHYSIS Driver:
     i. Start Time:_____
     ii. End Time:_____
     iii. Total Mileage: _____
     iv. Number of Pickups:_____
6. Container Information: (Please put the # of containers or circle none)
   - 1 ✓ Cooler
   - __ Styrofoam Cooler
   - ____ Boxes
   - None
   - ___ Carboy(s)
   - __Carboy Trash Can(s)
   - ____ Carboy Cap(s)
   - Other _____
7. What type of ice was used: (Please circle any that apply)
   - Wet Ice
   - Blue Ice
   - Dry Ice
   - Water
   - None
8. Randomly Selected Samples Temperature (°C): 3.6 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

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

Notes:

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

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Olaitlappe	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-9768-2757.1
Client Contact: Dr. Ron Fenstemacher	Phone: 8087485848	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID:			Job #:

Address: 630 South Beretania Street Chemistry Lab	Due Date Requested:
City: Honolulu	TAT Requested (days):
State, Zip: HI, 96843	Compliance Project: Δ Yes Δ No
Phone: 808-748-5091(Tel)	PO #: C20525101 exp 05312023
Email: RFENSTEMACHER@hbws.org	WO #:
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111
Site: Hawaii	SSOW#:

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	625.2_PREC - (MOD) 525plus Plus TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	R	RA		RA		
MOANALUA WELLS				Water									
AIEA GULCH WELLS PUMP 2	12-27-22	1030	G	Water			2		2	2	4		
AIEA WELLS PUMPS 1&2 (260)				Water									
HALAWA WELLS UNITS 1&2				Water									
MOANALUA WELLS				Water									
AIEA GULCH WELLS PUMP 2				Water									
AIEA WELLS PUMPS 1&2 (260)				Water									
HALAWA WELLS UNITS 1&2				Water									
MOANALUA WELLS				Water									
AIEA GULCH WELLS PUMP 2				Water									
AIEA WELLS PUMPS 1&2 (260)				Water									

380-32811 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FedEx 7708 9438 3835		
Relinquished [redacted]	Date/Time: 12-27-22 1700	Company	Received by: Mark Urrutia	Date/Time: 12/29/22 1010	Company EEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: (750A) 1.8/1.7 gel - frozen

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-32811-1

Login Number: 32811
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Monrovia

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	The Travel Blank's not noted on the COC.
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	