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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 12/28/2022 8:16:48 PM

JOB DESCRIPTION

Rush Weekly RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-28460-1

Eurofins Eaton Monrovia

Job Notes

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

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

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

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

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

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

Compliance Statement

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

Authorization



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Authorized for release by
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Definitions/Glossary

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

Job ID: 380-28460-1

Qualifiers

GC/MS Semi VOA

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

GC/MS Semi VOA TICs

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

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

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

Case Narrative

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

Job ID: 380-28460-1

Job ID: 380-28460-1

Laboratory: Eurofins Eaton Monrovia

Narrative

Job Narrative 380-28460-1

Comments

No additional comments.

Receipt

The samples were received on 11/16/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9° C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The sample dates and sample times are noted on the COC. This information was logged in according to the received containers' labels (11/14/2022 & 09:30, respectively).

GC/MS Semi VOA

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

Subcontract non-Sister

See attached subcontract report.

Organic Prep

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

Subcontract Work

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

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

Detection Summary

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

Job ID: 380-28460-1

Client Sample ID: HALAWA SHAFT
PWSID Number: HI0000331

Lab Sample ID: 380-28460-1

No Detections.

Client Sample ID: TB HALAWA SHAFT

Lab Sample ID: 380-28460-2

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins Eaton Monrovia

Client Sample Results

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

Job ID: 380-28460-1

Client Sample ID: HALAWA SHAFT

Lab Sample ID: 380-28460-1

Date Collected: 11/14/22 09:30

Matrix: Drinking Water

Date Received: 11/16/22 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
2,4'-DDE	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
2,4'-DDT	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
2,4-Dinitrotoluene	ND	*1	0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
2,6-Dinitrotoluene	ND	*1	0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
4,4'-DDD	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
4,4'-DDE	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
4,4'-DDT	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Acenaphthene	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Acenaphthylene	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Acetochlor	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Alachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
alpha-BHC	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
alpha-Chlordane	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Anthracene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 20:57	1
Atrazine	ND	*1	0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Benz(a)anthracene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Benzo[a]pyrene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 20:57	1
Benzo[b]fluoranthene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 20:57	1
Benzo[g,h,i]perylene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Benzo[k]fluoranthene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 20:57	1
beta-BHC	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Bromacil	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Butachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Butylbenzylphthalate	ND		0.50	ug/L		11/19/22 12:15	11/21/22 20:57	1
Caffeine	ND	*1	0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Chlorobenzilate	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Chloroneb	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Chlorpyrifos	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Chrysene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 20:57	1
delta-BHC	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		11/19/22 12:15	11/21/22 20:57	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		11/19/22 12:15	11/21/22 20:57	1
Diazinon (Qualitative)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Dibenz(a,h)anthracene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Diclorvos (DDVP)	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Dieldrin	ND		0.20	ug/L		11/19/22 12:15	11/21/22 20:57	1
Diethylphthalate	ND		0.50	ug/L		11/19/22 12:15	11/21/22 20:57	1
Dimethoate	ND	*1	0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Dimethylphthalate	ND		0.50	ug/L		11/19/22 12:15	11/21/22 20:57	1
Di-n-butyl phthalate	ND		0.99	ug/L		11/19/22 12:15	11/21/22 20:57	1
Di-n-octyl phthalate	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Endosulfan I (Alpha)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Endosulfan II (Beta)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Endosulfan sulfate	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Endrin	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Endrin aldehyde	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
EPTC	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1

Eurofins Eaton Monrovia

Client Sample Results

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

Job ID: 380-28460-1

Client Sample ID: HALAWA SHAFT

Lab Sample ID: 380-28460-1

Date Collected: 11/14/22 09:30

Matrix: Drinking Water

Date Received: 11/16/22 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Fluorene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
gamma-Chlordane	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Heptachlor	ND		0.040	ug/L		11/19/22 12:15	11/21/22 20:57	1
Heptachlor epoxide (isomer B)	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Hexachlorobenzene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Hexachlorocyclopentadiene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Indeno[1,2,3-cd]pyrene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Isophorone	ND		0.50	ug/L		11/19/22 12:15	11/21/22 20:57	1
Lindane	ND		0.040	ug/L		11/19/22 12:15	11/21/22 20:57	1
Malathion	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Methoxychlor	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Metolachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Metribuzin	ND	^3+	0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Molinate	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Naphthalene	ND		0.30	ug/L		11/19/22 12:15	11/21/22 20:57	1
Parathion	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		11/19/22 12:15	11/21/22 20:57	1
Phenanthrene	ND		0.040	ug/L		11/19/22 12:15	11/21/22 20:57	1
Propachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Pyrene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Simazine	ND	*1	0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Terbacil	ND		0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Terbutylazine	ND	*1	0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1
Thiobencarb	ND		0.20	ug/L		11/19/22 12:15	11/21/22 20:57	1
trans-Nonachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 20:57	1
Trifluralin	ND	*1	0.099	ug/L		11/19/22 12:15	11/21/22 20:57	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L				11/19/22 12:15	11/21/22 20:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	105		70 - 130	11/19/22 12:15	11/21/22 20:57	1
Triphenylphosphate	109		70 - 130	11/19/22 12:15	11/21/22 20:57	1
Perylene-d12	89		70 - 130	11/19/22 12:15	11/21/22 20:57	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		11/21/22 00:00	12/03/22 09:45	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Acenaphthene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Anthracene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1

Eurofins Eaton Monrovia

Client Sample Results

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

Job ID: 380-28460-1

Client Sample ID: HALAWA SHAFT

Lab Sample ID: 380-28460-1

Date Collected: 11/14/22 09:30

Matrix: Drinking Water

Date Received: 11/16/22 10:00

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		11/21/22 00:00	12/03/22 09:45	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Biphenyl	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Chrysene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/21/22 00:00	12/03/22 09:45	1
Fluoranthene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Fluorene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Naphthalene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Perylene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Phenanthrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1
Pyrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 09:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	92		45 - 118	11/21/22 00:00	12/03/22 09:45	1
(d10-Phenanthrene)	91		56 - 123	11/21/22 00:00	12/03/22 09:45	1
(d12-Chrysene)	88		36 - 142	11/21/22 00:00	12/03/22 09:45	1
(d12-Perylene)	89		36 - 161	11/21/22 00:00	12/03/22 09:45	1
(d8-Naphthalene)	86		20 - 112	11/21/22 00:00	12/03/22 09:45	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	0.020		mg/L			11/18/22 04:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	88		60 - 140		11/18/22 04:25	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	0.027		mg/L			11/22/22 18:47	1
JP5	ND	U	0.054		mg/L			11/22/22 18:47	1
JP8	ND	U	0.054		mg/L			11/22/22 18:47	1
MOTOR OIL	ND	U	0.054		mg/L			11/22/22 18:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	88		60 - 130		11/22/22 18:47	1
HEXACOSANE	104		60 - 130		11/22/22 18:47	1

Client Sample ID: TB HALAWA SHAFT

Lab Sample ID: 380-28460-2

Date Collected: 11/14/22 09:30

Matrix: Water

Date Received: 11/16/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			11/18/22 05:01	1

Eurofins Eaton Monrovia

Client Sample Results

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

Job ID: 380-28460-1

Client Sample ID: TB HALAWA SHAFT

Lab Sample ID: 380-28460-2

Date Collected: 11/14/22 09:30

Matrix: Water

Date Received: 11/16/22 10:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
BROMOFLUOROBENZENE	85		60 - 140		11/18/22 05:01	1

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Action Limit Summary

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

Job ID: 380-28460-1

Client Sample ID: HALAWA SHAFT
PWSID Number: HI0000331

Lab Sample ID: 380-28460-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
Alachlor	ND		ug/L	2	0.050	525.2	Total/NA
Atrazine	ND	*1	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	0.59	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.59	525.2	Total/NA
Endrin	ND		ug/L	2	0.099	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	0.099	525.2	Total/NA
Simazine	ND	*1	ug/L	4	0.050	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-28460-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-28460-1	HALAWA SHAFT	105	109	89

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-28262-D-4-A DU	Duplicate	99	110	110
380-28412-AY-1-A MS	Matrix Spike	106	115	92
LCS 380-24775/3-A	Lab Control Sample	93	96	91
LCS 380-24775/4-A	Lab Control Sample Dup	109	102	93
MB 380-24775/1-A	Method Blank	97	100	92
MRL 380-24775/2-A	Lab Control Sample	101	101	89

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

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

Matrix: BlankMatrix

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
101914-B1	Method Blank	71	92	92	81	82
101914-BS1	Lab Control Sample	76	83	74	78	81
101914-BS2	Lab Control Sample Dup	78	96	87	74	97

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

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (45-118)	Phenanth (56-123)	CRY (36-142)	NPT (20-112)	PRY (36-161)
380-28460-1	HALAWA SHAFT	92	91	88	86	89

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

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Surrogate Summary

Client: City & County of Honolulu
 Project/Site: Rush Weekly RED-HILL
 CRY = (d12-Chrysene)
 NPT = (d8-Naphthalene)
 PRY = (d12-Perylene)

Job ID: 380-28460-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-28460-1	HALAWA SHAFT	88

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)
22VGH7K10C	LCD	111
22VGH7K10L	Lab Control Sample	99

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-28460-2	TB HALAWA SHAFT	85

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB
22VGH7K10B	Method Blank	

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	HEXACOSANE (60-130)
380-28460-1	HALAWA SHAFT	88	104

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Surrogate Summary

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

Job ID: 380-28460-1

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

BB XACOSAI

Lab Sample ID	Client Sample ID
22DSK033WB	Method Blank

Surrogate Legend

BB = BROMOBENZENE
 HEXACOSANE = HEXACOSANE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

BB XACOSAI
 (60-130) (60-130)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
22DSK033WC	LCD	99	106
22DSK033WL	Lab Control Sample	104	118
22J5K033WC	LCD	99	109
22J5K033WL	Lab Control Sample	94	106
22J8K033WC	LCD	100	105
22J8K033WL	Lab Control Sample	97	105

Surrogate Legend

BB = BROMOBENZENE
 HEXACOSANE = HEXACOSANE

QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: MB 380-24775/1-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24775

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
2,4'-DDE	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
2,4'-DDT	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
2,4-Dinitrotoluene	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
2,6-Dinitrotoluene	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
4,4'-DDD	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
4,4'-DDE	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
4,4'-DDT	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Acenaphthene	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Acenaphthylene	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Acetochlor	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Alachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
alpha-BHC	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
alpha-Chlordane	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Anthracene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 14:37	1
Atrazine	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Benz(a)anthracene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Benzo[a]pyrene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 14:37	1
Benzo[b]fluoranthene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 14:37	1
Benzo[g,h,i]perylene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Benzo[k]fluoranthene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 14:37	1
beta-BHC	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Bromacil	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Butachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Butylbenzylphthalate	ND		0.50	ug/L		11/19/22 12:15	11/21/22 14:37	1
Caffeine	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Chlorobenzilate	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Chloroneb	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Chlorpyrifos	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Chrysene	ND		0.020	ug/L		11/19/22 12:15	11/21/22 14:37	1
delta-BHC	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Di(2-ethylhexyl)adipate	ND		0.60	ug/L		11/19/22 12:15	11/21/22 14:37	1
Bis(2-ethylhexyl) phthalate	ND		0.60	ug/L		11/19/22 12:15	11/21/22 14:37	1
Diazinon (Qualitative)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Dibenz(a,h)anthracene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Diclorvos (DDVP)	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Dieldrin	ND		0.20	ug/L		11/19/22 12:15	11/21/22 14:37	1
Diethylphthalate	ND		0.50	ug/L		11/19/22 12:15	11/21/22 14:37	1
Dimethoate	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Dimethylphthalate	ND		0.50	ug/L		11/19/22 12:15	11/21/22 14:37	1
Di-n-butyl phthalate	ND		0.99	ug/L		11/19/22 12:15	11/21/22 14:37	1
Di-n-octyl phthalate	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Endosulfan I (Alpha)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Endosulfan II (Beta)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Endosulfan sulfate	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Endrin	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Endrin aldehyde	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1

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QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: MB 380-24775/1-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24775

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Fluoranthene	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Fluorene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
gamma-Chlordane	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Heptachlor	ND		0.040	ug/L		11/19/22 12:15	11/21/22 14:37	1
Heptachlor epoxide (isomer B)	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Hexachlorobenzene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Hexachlorocyclopentadiene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Indeno[1,2,3-cd]pyrene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Isophorone	ND		0.50	ug/L		11/19/22 12:15	11/21/22 14:37	1
Lindane	ND		0.040	ug/L		11/19/22 12:15	11/21/22 14:37	1
Malathion	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Methoxychlor	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Metolachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Metribuzin	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Molinate	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Naphthalene	ND		0.30	ug/L		11/19/22 12:15	11/21/22 14:37	1
Parathion	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		11/19/22 12:15	11/21/22 14:37	1
Phenanthrene	ND		0.040	ug/L		11/19/22 12:15	11/21/22 14:37	1
Propachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Pyrene	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Simazine	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Terbacil	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Terbutylazine	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1
Thiobencarb	ND		0.20	ug/L		11/19/22 12:15	11/21/22 14:37	1
trans-Nonachlor	ND		0.050	ug/L		11/19/22 12:15	11/21/22 14:37	1
Trifluralin	ND		0.099	ug/L		11/19/22 12:15	11/21/22 14:37	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.11	T J	ug/L		1.19		11/19/22 12:15	11/21/22 14:37	1
Unknown	2.29	T J	ug/L		1.30		11/19/22 12:15	11/21/22 14:37	1
Unknown	5.29	T J	ug/L		1.54		11/19/22 12:15	11/21/22 14:37	1
Unknown	3.06	T J	ug/L		1.60		11/19/22 12:15	11/21/22 14:37	1
Unknown	4.79	T J	ug/L		1.66		11/19/22 12:15	11/21/22 14:37	1
1,3,5-Trioxane	11.4	T J N	ug/L		1.71	110-88-3	11/19/22 12:15	11/21/22 14:37	1
Unknown	10.1	T J	ug/L		1.75		11/19/22 12:15	11/21/22 14:37	1
Unknown	2.49	T J	ug/L		1.84		11/19/22 12:15	11/21/22 14:37	1
3-Hexene, 2,3-dimethyl-	0.679	T J N	ug/L		2.14	7145-23-5	11/19/22 12:15	11/21/22 14:37	1
Decane	1.26	T J N	ug/L		2.42	124-18-5	11/19/22 12:15	11/21/22 14:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	97		70 - 130	11/19/22 12:15	11/21/22 14:37	1
Triphenylphosphate	100		70 - 130	11/19/22 12:15	11/21/22 14:37	1
Perylene-d12	92		70 - 130	11/19/22 12:15	11/21/22 14:37	1

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QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: LCS 380-24775/3-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	2.00	2.02		ug/L		101	70 - 130
2,4'-DDE	2.00	1.88		ug/L		94	70 - 130
2,4'-DDT	2.00	1.97		ug/L		99	70 - 130
2,4-Dinitrotoluene	2.00	1.64		ug/L		82	70 - 130
2,6-Dinitrotoluene	2.00	1.59		ug/L		80	70 - 130
4,4'-DDD	2.00	1.83		ug/L		92	70 - 130
4,4'-DDE	2.00	1.84		ug/L		92	70 - 130
4,4'-DDT	2.00	1.67		ug/L		84	70 - 130
Acenaphthene	2.00	1.90		ug/L		95	70 - 130
Acenaphthylene	2.00	1.89		ug/L		95	70 - 130
Acetochlor	2.00	2.01		ug/L		101	70 - 130
Alachlor	2.00	2.06		ug/L		103	70 - 130
alpha-BHC	2.00	2.04		ug/L		102	70 - 130
alpha-Chlordane	2.00	1.68		ug/L		84	70 - 130
Anthracene	2.00	2.24		ug/L		112	70 - 130
Atrazine	2.00	1.90		ug/L		95	70 - 130
Benz(a)anthracene	2.00	2.02		ug/L		101	70 - 130
Benzo[a]pyrene	2.00	2.12		ug/L		106	70 - 130
Benzo[b]fluoranthene	2.00	2.06		ug/L		103	70 - 130
Benzo[g,h,i]perylene	2.00	2.25		ug/L		113	70 - 130
Benzo[k]fluoranthene	2.00	2.24		ug/L		112	70 - 130
beta-BHC	2.00	2.08		ug/L		104	70 - 130
Bromacil	2.00	1.97		ug/L		99	70 - 130
Butachlor	2.00	2.27		ug/L		114	70 - 130
Butylbenzylphthalate	2.00	2.12		ug/L		106	70 - 130
Caffeine	2.00	1.15		ug/L		58	45 - 137
Chlorobenzilate	2.00	2.20		ug/L		110	70 - 130
Chloroneb	2.00	2.07		ug/L		104	70 - 130
Chlorothalonil (Draconil, Bravo)	2.00	1.74		ug/L		87	70 - 130
Chlorpyrifos	2.00	2.11		ug/L		106	70 - 130
Chrysene	2.00	2.15		ug/L		108	70 - 130
delta-BHC	2.00	2.06		ug/L		103	70 - 130
Di(2-ethylhexyl)adipate	2.00	2.11		ug/L		106	70 - 130
Bis(2-ethylhexyl) phthalate	2.00	2.09		ug/L		105	70 - 130
Diazinon (Qualitative)	2.00	1.89		ug/L		95	15 - 132
Dibenz(a,h)anthracene	2.00	2.22		ug/L		111	70 - 130
Diclorvos (DDVP)	2.00	1.94		ug/L		97	70 - 130
Dieldrin	2.00	1.93		ug/L		97	70 - 130
Diethylphthalate	2.00	1.93		ug/L		97	70 - 130
Dimethoate	2.00	0.870		ug/L		44	35 - 100
Dimethylphthalate	2.00	2.01		ug/L		101	70 - 130
Di-n-butyl phthalate	3.99	4.03		ug/L		101	70 - 130
Di-n-octyl phthalate	2.00	1.91		ug/L		96	70 - 130
Endosulfan I (Alpha)	2.00	1.96		ug/L		98	70 - 130
Endosulfan II (Beta)	2.00	1.93		ug/L		97	70 - 130
Endosulfan sulfate	2.00	2.06		ug/L		103	70 - 130
Endrin	2.00	2.06		ug/L		103	70 - 130
Endrin aldehyde	2.00	1.81		ug/L		91	70 - 130

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QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: LCS 380-24775/3-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
EPTC	2.00	1.95		ug/L		97	70 - 130
Fluoranthene	2.00	2.20		ug/L		110	70 - 130
Fluorene	2.00	2.08		ug/L		104	70 - 130
gamma-Chlordane	2.00	1.72		ug/L		86	70 - 130
Heptachlor	2.00	1.93		ug/L		97	70 - 130
Heptachlor epoxide (isomer B)	2.00	2.02		ug/L		101	70 - 130
Hexachlorobenzene	2.00	1.75		ug/L		88	70 - 130
Hexachlorocyclopentadiene	2.00	1.76		ug/L		88	70 - 130
Indeno[1,2,3-cd]pyrene	2.00	2.32		ug/L		116	70 - 130
Isophorone	2.00	1.91		ug/L		96	70 - 130
Lindane	2.00	2.06		ug/L		103	70 - 130
Malathion	2.00	2.37		ug/L		119	70 - 130
Methoxychlor	2.00	2.06		ug/L		103	70 - 130
Metolachlor	2.00	2.19		ug/L		110	70 - 130
Metribuzin	2.00	1.81		ug/L		91	70 - 130
Molinate	2.00	1.95		ug/L		98	70 - 130
Naphthalene	2.00	1.89		ug/L		95	70 - 130
Parathion	2.00	1.92		ug/L		96	70 - 130
Pendimethalin (Penoxaline)	2.00	1.63		ug/L		82	70 - 130
Phenanthrene	2.00	2.16		ug/L		108	70 - 130
Propachlor	2.00	1.98		ug/L		99	70 - 130
Pyrene	2.00	2.25		ug/L		113	70 - 130
Simazine	2.00	1.97		ug/L		99	70 - 130
Terbacil	2.00	1.89		ug/L		95	70 - 130
Terbutylazine	2.00	1.84		ug/L		92	70 - 130
Thiobencarb	2.00	2.24		ug/L		112	70 - 130
trans-Nonachlor	2.00	2.06		ug/L		103	70 - 130
Trifluralin	2.00	1.39		ug/L		70	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	93		70 - 130
Triphenylphosphate	96		70 - 130
Perylene-d12	91		70 - 130

Lab Sample ID: LCSD 380-24775/4-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.99	2.07		ug/L		104	70 - 130	3	20
2,4'-DDE	1.99	1.83		ug/L		92	70 - 130	3	20
2,4'-DDT	1.99	2.05		ug/L		103	70 - 130	4	20
2,4-Dinitrotoluene	1.99	2.03	*1	ug/L		102	70 - 130	21	20
2,6-Dinitrotoluene	1.99	2.02	*1	ug/L		102	70 - 130	24	20
4,4'-DDD	1.99	2.11		ug/L		106	70 - 130	14	20
4,4'-DDE	1.99	2.01		ug/L		101	70 - 130	9	20
4,4'-DDT	1.99	1.88		ug/L		94	70 - 130	11	20
Acenaphthene	1.99	2.11		ug/L		106	70 - 130	10	20

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QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: LCSD 380-24775/4-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Acenaphthylene	1.99	2.01		ug/L		101	70 - 130	6	20	
Acetochlor	1.99	2.07		ug/L		104	70 - 130	3	20	
Alachlor	1.99	2.09		ug/L		105	70 - 130	2	20	
alpha-BHC	1.99	2.28		ug/L		115	70 - 130	11	20	
alpha-Chlordane	1.99	2.02		ug/L		102	70 - 130	19	20	
Anthracene	1.99	2.25		ug/L		113	70 - 130	0	20	
Atrazine	1.99	2.36	*1	ug/L		119	70 - 130	22	20	
Benz(a)anthracene	1.99	2.06		ug/L		104	70 - 130	2	20	
Benzo[a]pyrene	1.99	2.11		ug/L		106	70 - 130	1	20	
Benzo[b]fluoranthene	1.99	1.79		ug/L		90	70 - 130	14	20	
Benzo[g,h,i]perylene	1.99	2.34		ug/L		118	70 - 130	4	20	
Benzo[k]fluoranthene	1.99	1.86		ug/L		94	70 - 130	18	20	
beta-BHC	1.99	2.44		ug/L		122	70 - 130	16	20	
Bromacil	1.99	2.12		ug/L		106	70 - 130	7	20	
Butachlor	1.99	2.38		ug/L		120	70 - 130	5	20	
Butylbenzylphthalate	1.99	2.38		ug/L		120	70 - 130	12	20	
Caffeine	1.99	1.45	*1	ug/L		73	45 - 137	23	20	
Chlorobenzilate	1.99	2.14		ug/L		107	70 - 130	3	20	
Chloroneb	1.99	2.07		ug/L		104	70 - 130	0	20	
Chlorothalonil (Draconil, Bravo)	1.99	1.85		ug/L		93	70 - 130	6	20	
Chlorpyrifos	1.99	2.20		ug/L		111	70 - 130	4	20	
Chrysene	1.99	2.22		ug/L		112	70 - 130	3	20	
delta-BHC	1.99	2.08		ug/L		105	70 - 130	1	20	
Di(2-ethylhexyl)adipate	1.99	2.27		ug/L		114	70 - 130	7	20	
Bis(2-ethylhexyl) phthalate	1.99	2.20		ug/L		111	70 - 130	5	20	
Diazinon (Qualitative)	1.99	2.15		ug/L		108	15 - 132	13	20	
Dibenz(a,h)anthracene	1.99	2.46		ug/L		124	70 - 130	10	20	
Diclorvos (DDVP)	1.99	2.26		ug/L		114	70 - 130	16	20	
Dieldrin	1.99	1.73		ug/L		87	70 - 130	11	20	
Diethylphthalate	1.99	2.27		ug/L		114	70 - 130	16	20	
Dimethoate	1.99	1.15	*1	ug/L		58	35 - 100	28	20	
Dimethylphthalate	1.99	2.24		ug/L		113	70 - 130	11	20	
Di-n-butyl phthalate	3.98	4.11		ug/L		103	70 - 130	2	20	
Di-n-octyl phthalate	1.99	1.74		ug/L		88	70 - 130	9	20	
Endosulfan I (Alpha)	1.99	2.13		ug/L		107	70 - 130	8	20	
Endosulfan II (Beta)	1.99	2.07		ug/L		104	70 - 130	7	20	
Endosulfan sulfate	1.99	1.85		ug/L		93	70 - 130	11	20	
Endrin	1.99	2.13		ug/L		107	70 - 130	3	20	
Endrin aldehyde	1.99	1.82		ug/L		91	70 - 130	1	20	
EPTC	1.99	2.21		ug/L		111	70 - 130	13	20	
Fluoranthene	1.99	2.28		ug/L		115	70 - 130	3	20	
Fluorene	1.99	2.20		ug/L		111	70 - 130	6	20	
gamma-Chlordane	1.99	2.09		ug/L		105	70 - 130	19	20	
Heptachlor	1.99	2.00		ug/L		101	70 - 130	3	20	
Heptachlor epoxide (isomer B)	1.99	2.06		ug/L		103	70 - 130	2	20	
Hexachlorobenzene	1.99	2.06		ug/L		104	70 - 130	16	20	
Hexachlorocyclopentadiene	1.99	1.97		ug/L		99	70 - 130	11	20	
Indeno[1,2,3-cd]pyrene	1.99	2.44		ug/L		122	70 - 130	5	20	
Isophorone	1.99	2.21		ug/L		111	70 - 130	15	20	

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QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: LCSD 380-24775/4-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lindane	1.99	2.46		ug/L		123	70 - 130	18	20
Malathion	1.99	2.44		ug/L		123	70 - 130	3	20
Methoxychlor	1.99	2.10		ug/L		106	70 - 130	2	20
Metolachlor	1.99	2.29		ug/L		115	70 - 130	4	20
Metribuzin	1.99	1.89		ug/L		95	70 - 130	4	20
Molinate	1.99	2.31		ug/L		116	70 - 130	17	20
Naphthalene	1.99	2.23		ug/L		112	70 - 130	16	20
Parathion	1.99	1.93		ug/L		97	70 - 130	0	20
Pendimethalin (Penoxaline)	1.99	1.68		ug/L		85	70 - 130	3	20
Phenanthrene	1.99	2.18		ug/L		110	70 - 130	1	20
Propachlor	1.99	2.42		ug/L		122	70 - 130	20	20
Pyrene	1.99	2.30		ug/L		116	70 - 130	2	20
Simazine	1.99	2.53	*1	ug/L		127	70 - 130	25	20
Terbacil	1.99	2.04		ug/L		103	70 - 130	8	20
Terbutylazine	1.99	2.28	*1	ug/L		114	70 - 130	21	20
Thiobencarb	1.99	2.23		ug/L		112	70 - 130	0	20
trans-Nonachlor	1.99	2.35		ug/L		118	70 - 130	13	20
Trifluralin	1.99	1.90	*1	ug/L		95	70 - 130	31	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Nitro-m-xylene	109		70 - 130
Triphenylphosphate	102		70 - 130
Perylene-d12	93		70 - 130

Lab Sample ID: MRL 380-24775/2-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	0.0993	0.134		ug/L		135	50 - 150
2,4'-DDE	0.0993	0.0981	J	ug/L		99	50 - 150
2,4'-DDT	0.0993	0.0871	J	ug/L		88	50 - 150
2,4-Dinitrotoluene	0.0993	0.0664	J	ug/L		67	50 - 150
2,6-Dinitrotoluene	0.0993	0.0688	J	ug/L		69	50 - 150
4,4'-DDD	0.0993	0.102		ug/L		103	50 - 150
4,4'-DDE	0.0993	0.0905	J	ug/L		91	50 - 150
4,4'-DDT	0.0993	0.130		ug/L		131	50 - 150
Acenaphthene	0.0993	0.0942	J	ug/L		95	50 - 150
Acenaphthylene	0.0993	0.0878	J	ug/L		88	50 - 150
Acetochlor	0.0497	0.0416	J	ug/L		84	50 - 150
Alachlor	0.0497	0.0437	J	ug/L		88	50 - 150
alpha-BHC	0.0993	0.0979	J	ug/L		99	50 - 150
alpha-Chlordane	0.0248	ND		ug/L		79	50 - 150
Anthracene	0.0199	0.0225		ug/L		113	50 - 150
Atrazine	0.0497	0.0609		ug/L		123	50 - 150
Benz(a)anthracene	0.0497	0.0510		ug/L		103	50 - 150
Benzo[a]pyrene	0.0199	0.0190	J	ug/L		96	50 - 150
Benzo[b]fluoranthene	0.0199	0.0200		ug/L		101	50 - 150

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QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: MRL 380-24775/2-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Spike Added	MRL	MRL	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzo[g,h,i]perylene	0.0497	0.0449	J	ug/L		90	50 - 150
Benzo[k]fluoranthene	0.0199	0.0201		ug/L		101	50 - 150
beta-BHC	0.0993	0.0983	J	ug/L		99	50 - 150
Bromacil	0.0993	0.142		ug/L		143	50 - 150
Butachlor	0.0497	0.0582		ug/L		117	50 - 150
Butylbenzylphthalate	0.149	0.178	J	ug/L		119	50 - 150
Caffeine	0.0497	0.0336	J	ug/L		68	50 - 150
Chlorobenzilate	0.0993	0.102		ug/L		102	50 - 150
Chloroneb	0.0993	0.106		ug/L		107	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0993	0.131		ug/L		132	50 - 150
Chlorpyrifos	0.0497	0.0594		ug/L		120	50 - 150
Chrysene	0.0199	0.0200		ug/L		101	50 - 150
delta-BHC	0.0993	0.105		ug/L		105	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.364	J	ug/L		122	50 - 150
Bis(2-ethylhexyl) phthalate	0.596	0.654		ug/L		110	50 - 150
Diazinon (Qualitative)	0.0993	0.104		ug/L		105	15 - 132
Dibenz(a,h)anthracene	0.0497	0.0465	J	ug/L		94	50 - 150
Diclorvos (DDVP)	0.0497	0.0517		ug/L		104	50 - 150
Dieldrin	0.0993	0.0986	J	ug/L		99	50 - 150
Diethylphthalate	0.149	0.144	J	ug/L		97	50 - 150
Dimethoate	0.0993	0.0554	J	ug/L		56	35 - 100
Dimethylphthalate	0.298	0.280	J	ug/L		94	50 - 150
Di-n-butyl phthalate	0.298	0.343	J	ug/L		115	49 - 243
Di-n-octyl phthalate	0.0993	0.117		ug/L		118	50 - 150
Endosulfan I (Alpha)	0.0993	0.0835	J	ug/L		84	50 - 150
Endosulfan II (Beta)	0.0993	0.118		ug/L		118	50 - 150
Endosulfan sulfate	0.0993	0.103		ug/L		104	50 - 150
Endrin	0.0993	0.124		ug/L		125	50 - 150
Endrin aldehyde	0.0993	ND		ug/L		69	50 - 150
EPTC	0.0993	0.0930	J	ug/L		94	50 - 150
Fluoranthene	0.0497	0.0518	J	ug/L		104	50 - 150
Fluorene	0.0497	ND		ug/L		89	50 - 150
gamma-Chlordane	0.0248	ND		ug/L		76	50 - 150
Heptachlor	0.0397	0.0473		ug/L		119	50 - 150
Heptachlor epoxide (isomer B)	0.0497	0.0426	J	ug/L		86	50 - 150
Hexachlorobenzene	0.0497	0.0468	J	ug/L		94	50 - 150
Hexachlorocyclopentadiene	0.0497	0.0390	J	ug/L		78	50 - 150
Indeno[1,2,3-cd]pyrene	0.0497	0.0426	J	ug/L		86	50 - 150
Isophorone	0.0993	0.101	J	ug/L		102	50 - 150
Lindane	0.0397	0.0392	J	ug/L		99	50 - 150
Malathion	0.0993	0.0973	J	ug/L		98	50 - 150
Methoxychlor	0.0993	0.122		ug/L		123	50 - 150
Metolachlor	0.0497	0.0548		ug/L		110	50 - 150
Metribuzin	0.0497	0.0890	^3+	ug/L		179	50 - 150
Molinate	0.0993	0.0939	J	ug/L		95	50 - 150
Naphthalene	0.0993	0.109	J	ug/L		110	50 - 150
Parathion	0.0993	0.112		ug/L		113	50 - 150
Pendimethalin (Penoxaline)	0.0993	0.117		ug/L		118	50 - 150
Phenanthrene	0.0199	0.0241	J	ug/L		121	50 - 150

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QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: MRL 380-24775/2-A
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Propachlor	0.0497	0.0516		ug/L		104	50 - 150
Pyrene	0.0497	0.0524		ug/L		106	50 - 150
Simazine	0.0497	0.0565		ug/L		114	50 - 150
Terbacil	0.0993	0.115		ug/L		116	50 - 150
Terbutylazine	0.0993	0.119		ug/L		120	50 - 150
Thiobencarb	0.0993	0.123	J	ug/L		124	50 - 150
trans-Nonachlor	0.0248	ND		ug/L		77	50 - 150
Trifluralin	0.0993	0.107		ug/L		108	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	101		70 - 130
Triphenylphosphate	101		70 - 130
Perylene-d12	89		70 - 130

Lab Sample ID: 380-28412-AY-1-A MS
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		1.96	2.23		ug/L		113	70 - 130
2,4'-DDE	ND		1.96	2.19		ug/L		111	70 - 130
2,4'-DDT	ND		1.96	2.40		ug/L		122	70 - 130
2,4-Dinitrotoluene	ND	*1	1.96	2.13		ug/L		109	70 - 130
2,6-Dinitrotoluene	ND	*1	1.96	2.04		ug/L		104	70 - 130
4,4'-DDD	ND		1.96	2.46		ug/L		125	70 - 130
4,4'-DDE	ND		1.96	2.05		ug/L		104	70 - 130
4,4'-DDT	ND		1.96	2.07		ug/L		105	70 - 130
Acenaphthene	ND		1.96	2.03		ug/L		103	70 - 130
Acenaphthylene	ND		1.96	2.11		ug/L		108	70 - 130
Acetochlor	ND		1.96	2.23		ug/L		114	70 - 130
Alachlor	ND		1.96	2.16		ug/L		110	70 - 130
alpha-BHC	ND		1.96	2.20		ug/L		112	70 - 130
alpha-Chlordane	ND		1.96	1.87		ug/L		95	70 - 130
Anthracene	ND		1.96	2.19		ug/L		111	70 - 130
Atrazine	ND	*1	1.96	1.96		ug/L		100	70 - 130
Benz(a)anthracene	ND		1.96	2.30		ug/L		117	70 - 130
Benzo[a]pyrene	ND		1.96	2.25		ug/L		115	70 - 130
Benzo[b]fluoranthene	ND		1.96	2.20		ug/L		112	70 - 130
Benzo[g,h,i]perylene	ND		1.96	2.30		ug/L		117	70 - 130
Benzo[k]fluoranthene	ND		1.96	2.32		ug/L		118	70 - 130
beta-BHC	ND		1.96	2.23		ug/L		114	70 - 130
Bromacil	ND		1.96	2.04		ug/L		104	70 - 130
Butachlor	ND		1.96	2.45		ug/L		125	70 - 130
Butylbenzylphthalate	ND		1.96	2.49		ug/L		127	70 - 130
Caffeine	ND	*1	1.96	1.52		ug/L		77	46 - 144
Chlorobenzilate	ND		1.96	2.34		ug/L		119	70 - 130
Chloroneb	ND		1.96	1.98		ug/L		101	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		1.96	2.19		ug/L		112	70 - 130

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QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: 380-28412-AY-1-A MS
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Chlorpyrifos	ND		1.96	2.54		ug/L		129	70 - 130
Chrysene	ND		1.96	2.27		ug/L		116	70 - 130
delta-BHC	ND		1.96	2.07		ug/L		105	70 - 130
Di(2-ethylhexyl)adipate	ND		1.96	2.34		ug/L		119	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.96	2.15		ug/L		109	70 - 130
Diazinon (Qualitative)	ND		1.96	2.14		ug/L		109	15 - 132
Dibenz(a,h)anthracene	ND		1.96	2.43		ug/L		124	70 - 130
Diclorvos (DDVP)	ND		1.96	2.14		ug/L		109	70 - 130
Dieldrin	ND		1.96	2.13		ug/L		109	70 - 130
Diethylphthalate	ND		1.96	2.22		ug/L		113	70 - 130
Dimethoate	ND	*1	1.96	1.47		ug/L		75	34 - 111
Dimethylphthalate	ND		1.96	2.28		ug/L		116	70 - 130
Di-n-butyl phthalate	ND		3.93	4.46		ug/L		114	70 - 130
Di-n-octyl phthalate	ND		1.96	2.03		ug/L		103	70 - 130
Endosulfan I (Alpha)	ND		1.96	2.19		ug/L		111	70 - 130
Endosulfan II (Beta)	ND		1.96	2.36		ug/L		120	70 - 130
Endosulfan sulfate	ND		1.96	2.04		ug/L		104	70 - 130
Endrin	ND		1.96	2.25		ug/L		115	70 - 130
Endrin aldehyde	ND		1.96	1.89		ug/L		96	70 - 130
EPTC	ND		1.96	1.98		ug/L		101	70 - 130
Fluoranthene	ND		1.96	2.23		ug/L		113	70 - 130
Fluorene	ND		1.96	2.18		ug/L		111	70 - 130
gamma-Chlordane	ND		1.96	1.94		ug/L		99	70 - 130
Heptachlor	ND		1.96	1.96		ug/L		100	70 - 130
Heptachlor epoxide (isomer B)	ND		1.96	2.12		ug/L		108	70 - 130
Hexachlorobenzene	ND		1.96	2.03		ug/L		104	70 - 130
Hexachlorocyclopentadiene	ND		1.96	1.66		ug/L		84	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.96	2.36		ug/L		120	70 - 130
Isophorone	ND		1.96	2.10		ug/L		107	70 - 130
Lindane	ND		1.96	2.16		ug/L		110	70 - 130
Malathion	ND		1.96	2.23		ug/L		113	70 - 130
Methoxychlor	ND		1.96	2.16		ug/L		110	70 - 130
Metolachlor	ND		1.96	2.35		ug/L		120	70 - 130
Metribuzin	ND	^3+	1.96	1.81		ug/L		92	70 - 130
Molinate	ND		1.96	1.99		ug/L		101	70 - 130
Naphthalene	ND		1.96	2.06		ug/L		105	70 - 130
Parathion	ND		1.96	1.98		ug/L		101	70 - 130
Pendimethalin (Penoxaline)	ND		1.96	1.65		ug/L		84	70 - 130
Phenanthrene	ND		1.96	2.12		ug/L		108	70 - 130
Propachlor	ND		1.96	2.25		ug/L		115	70 - 130
Pyrene	ND		1.96	2.55		ug/L		130	70 - 130
Simazine	ND	*1	1.96	2.07		ug/L		105	70 - 130
Terbacil	ND		1.96	2.13		ug/L		108	70 - 130
Terbutylazine	ND	*1	1.96	2.08		ug/L		106	70 - 130
Thiobencarb	ND		1.96	2.30		ug/L		117	70 - 130
trans-Nonachlor	ND		1.96	2.31		ug/L		118	70 - 130
Trifluralin	ND	*1	1.96	1.95		ug/L		99	70 - 130

QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: 380-28412-AY-1-A MS
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 24775

Surrogate	%Recovery	MS MS Qualifier	Limits
2-Nitro-m-xylene	106		70 - 130
Triphenylphosphate	115		70 - 130
Perylene-d12	92		70 - 130

Lab Sample ID: 380-28262-D-4-A DU
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
2,4'-DDD	ND		ND		ug/L		NC	20
2,4'-DDE	ND		ND		ug/L		NC	20
2,4'-DDT	ND		ND		ug/L		NC	20
2,4-Dinitrotoluene	ND	*1	ND	*1	ug/L		NC	20
2,6-Dinitrotoluene	ND	*1	ND	*1	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	*1	ND	*1	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	*1	ND	*1	ug/L		NC	20
Chlorobenzilate	ND		ND		ug/L		NC	20
Chloroneb	ND		ND		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	ND		ND		ug/L		NC	20
Chlorpyrifos	ND		ND		ug/L		NC	20
Chrysene	ND		ND		ug/L		NC	20
delta-BHC	ND		ND		ug/L		NC	20
Di(2-ethylhexyl)adipate	ND		ND		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	ND		ND		ug/L		NC	20
Diazinon (Qualitative)	ND		ND		ug/L		NC	20
Dibenz(a,h)anthracene	ND		ND		ug/L		NC	20
Diclorvos (DDVP)	ND		ND		ug/L		NC	20
Dieldrin	ND		ND		ug/L		NC	20
Diethylphthalate	ND		ND		ug/L		NC	20

QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: 380-28262-D-4-A DU
Matrix: Water
Analysis Batch: 24806

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 24775

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Dimethoate	ND	*1	ND	*1	ug/L		NC	20
Dimethylphthalate	ND		ND		ug/L		NC	20
Di-n-butyl phthalate	ND		ND		ug/L		NC	20
Di-n-octyl phthalate	ND		ND		ug/L		NC	20
Endosulfan I (Alpha)	ND		ND		ug/L		NC	20
Endosulfan II (Beta)	ND		ND		ug/L		NC	20
Endosulfan sulfate	ND		ND		ug/L		NC	20
Endrin	ND		ND		ug/L		NC	20
Endrin aldehyde	ND		ND		ug/L		NC	20
EPTC	ND		ND		ug/L		NC	20
Fluoranthene	ND		ND		ug/L		NC	20
Fluorene	ND		ND		ug/L		NC	20
gamma-Chlordane	ND		ND		ug/L		NC	20
Heptachlor	ND		ND		ug/L		NC	20
Heptachlor epoxide (isomer B)	ND		ND		ug/L		NC	20
Hexachlorobenzene	ND		ND		ug/L		NC	20
Hexachlorocyclopentadiene	ND		ND		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	ND		ND		ug/L		NC	20
Isophorone	ND		ND		ug/L		NC	20
Lindane	ND		ND		ug/L		NC	20
Malathion	ND		ND		ug/L		NC	20
Methoxychlor	ND		ND		ug/L		NC	20
Metolachlor	ND		ND		ug/L		NC	20
Metribuzin	ND	^3+	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	*1	ND	*1	ug/L		NC	20
Terbacil	ND		ND		ug/L		NC	20
Terbutylazine	ND	*1	ND	*1	ug/L		NC	20
Thiobencarb	ND		ND		ug/L		NC	20
trans-Nonachlor	ND		ND		ug/L		NC	20
Trifluralin	ND	*1	ND	*1	ug/L		NC	20

Surrogate	DU %Recovery	DU Qualifier	Limits
2-Nitro-m-xylene	99		70 - 130
Triphenylphosphate	110		70 - 130
Perylene-d12	110		70 - 130

QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: 101914-B1
Matrix: BlankMatrix
Analysis Batch: O-40028

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40028_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Acenaphthene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Anthracene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Biphenyl	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Chrysene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/21/22 00:00	12/03/22 04:24	1
Fluoranthene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Fluorene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Naphthalene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Perylene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Phenanthrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1
Pyrene	ND		0.005	0.001	µg/L		11/21/22 00:00	12/03/22 04:24	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	71		27 - 133	11/21/22 00:00	12/03/22 04:24	1
(d10-Phenanthrene)	92		43 - 129	11/21/22 00:00	12/03/22 04:24	1
(d12-Chrysene)	92		52 - 144	11/21/22 00:00	12/03/22 04:24	1
(d12-Perylene)	82		36 - 161	11/21/22 00:00	12/03/22 04:24	1
(d8-Naphthalene)	81		25 - 125	11/21/22 00:00	12/03/22 04:24	1

Lab Sample ID: 101914-BS1
Matrix: BlankMatrix
Analysis Batch: O-40028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40028_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.382		µg/L		76	31 - 128
1-Methylphenanthrene	0.5	0.368		µg/L		74	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.397		µg/L		79	55 - 122
2,6-Dimethylnaphthalene	0.5	0.404		µg/L		81	48 - 120
2-Methylnaphthalene	0.5	0.385		µg/L		77	47 - 130
Acenaphthene	0.5	0.335		µg/L		67	53 - 131
Acenaphthylene	0.5	0.386		µg/L		77	43 - 140
Anthracene	0.5	0.4		µg/L		80	58 - 135

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: 101914-BS1
Matrix: BlankMatrix
Analysis Batch: O-40028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40028_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benz[a]anthracene	0.5	0.389		µg/L		78	55 - 145
Benzo[a]pyrene	0.5	0.386		µg/L		77	51 - 143
Benzo[b]fluoranthene	0.5	0.542		µg/L		108	46 - 165
Benzo[e]pyrene	0.5	0.485		µg/L		97	42 - 152
Benzo[g,h,i]perylene	0.5	0.389		µg/L		78	63 - 133
Benzo[k]fluoranthene	0.5	0.481		µg/L		96	56 - 145
Biphenyl	0.5	0.401		µg/L		80	56 - 119
Chrysene	0.5	0.339		µg/L		68	56 - 141
Dibenz[a,h]anthracene	0.5	0.508		µg/L		102	55 - 150
Dibenzo[a,l]pyrene	0.5	0.344		µg/L		69	50 - 150
Dibenzothiophene	0.5	0.419		µg/L		84	75 - 113
Disalicylidenepropanediamine	50	28.3		µg/L		57	50 - 150
Fluoranthene	0.5	0.428		µg/L		86	60 - 146
Fluorene	0.5	0.4		µg/L		80	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.525		µg/L		105	50 - 151
Naphthalene	0.5	0.373		µg/L		75	41 - 126
Perylene	0.5	0.441		µg/L		88	48 - 141
Phenanthrene	0.5	0.416		µg/L		83	67 - 127
Pyrene	0.5	0.426		µg/L		85	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	76		27 - 133
(d10-Phenanthrene)	83		43 - 129
(d12-Chrysene)	74		52 - 144
(d12-Perylene)	81		36 - 161
(d8-Naphthalene)	78		25 - 125

Lab Sample ID: 101914-BS2
Matrix: BlankMatrix
Analysis Batch: O-40028

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40028_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.34		µg/L		68	31 - 128	11	30
1-Methylphenanthrene	0.5	0.482		µg/L		96	66 - 127	26	30
2,3,5-Trimethylnaphthalene	0.5	0.44		µg/L		88	55 - 122	11	30
2,6-Dimethylnaphthalene	0.5	0.337		µg/L		67	48 - 120	19	30
2-Methylnaphthalene	0.5	0.351		µg/L		70	47 - 130	10	30
Acenaphthene	0.5	0.382		µg/L		76	53 - 131	13	30
Acenaphthylene	0.5	0.353		µg/L		71	43 - 140	8	30
Anthracene	0.5	0.446		µg/L		89	58 - 135	11	30
Benz[a]anthracene	0.5	0.461		µg/L		92	55 - 145	16	30
Benzo[a]pyrene	0.5	0.438		µg/L		88	51 - 143	13	30
Benzo[b]fluoranthene	0.5	0.602		µg/L		120	46 - 165	11	30
Benzo[e]pyrene	0.5	0.557		µg/L		111	42 - 152	13	30
Benzo[g,h,i]perylene	0.5	0.434		µg/L		87	63 - 133	11	30
Benzo[k]fluoranthene	0.5	0.53		µg/L		106	56 - 145	10	30
Biphenyl	0.5	0.319		µg/L		64	56 - 119	22	30
Chrysene	0.5	0.391		µg/L		78	56 - 141	14	30

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: 101914-BS2
Matrix: BlankMatrix
Analysis Batch: O-40028

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40028_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dibenz[a,h]anthracene	0.5	0.572		µg/L		114	55 - 150	11	30
Dibenzo[a,i]pyrene	0.5	0.397		µg/L		79	50 - 150	14	30
Dibenzothiophene	0.5	0.467		µg/L		93	75 - 113	10	30
Disalicylidenepropanediamine	50	34.4		µg/L		69	50 - 150	19	30
Fluoranthene	0.5	0.477		µg/L		95	60 - 146	10	30
Fluorene	0.5	0.443		µg/L		89	58 - 131	11	30
Indeno[1,2,3-cd]pyrene	0.5	0.593		µg/L		119	50 - 151	12	30
Naphthalene	0.5	0.343		µg/L		69	41 - 126	8	30
Perylene	0.5	0.493		µg/L		99	48 - 141	12	30
Phenanthrene	0.5	0.463		µg/L		93	67 - 127	11	30
Pyrene	0.5	0.481		µg/L		96	54 - 156	12	30

Surrogate	LCS DUP %Recovery	LCS DUP Qualifier	Limits
(d10-Acenaphthene)	78		27 - 133
(d10-Phenanthrene)	96		43 - 129
(d12-Chrysene)	87		52 - 144
(d12-Perylene)	97		36 - 161
(d8-Naphthalene)	74		25 - 125

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

Lab Sample ID: 22VGH7K10B
Matrix: WATER
Analysis Batch: 22VGH7K10

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			11/17/22 12:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE					11/17/22 12:00	1

Lab Sample ID: 22VGH7K10L
Matrix: WATER
Analysis Batch: 22VGH7K10

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	0.441		mg/L		88	60 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOFLUOROBENZENE	99		70 - 130

QC Sample Results

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

Job ID: 380-28460-1

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

Lab Sample ID: 22DSK033WB
Matrix: WATER
Analysis Batch: 22DSK033W

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			11/22/22 14:47	1
JP5	ND	U	0.050		mg/L			11/22/22 14:47	1
JP8	ND	U	0.050		mg/L			11/22/22 14:47	1
MOTOR OIL	ND	U	0.050		mg/L			11/22/22 14:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE					11/22/22 14:47	1
HEXACOSANE					11/22/22 14:47	1

Lab Sample ID: 22DSK033WL
Matrix: WATER
Analysis Batch: 22DSK033W

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	2.84		mg/L		114	50 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	104		60 - 130
HEXACOSANE	118		60 - 130

Lab Sample ID: 22J5K033WL
Matrix: WATER
Analysis Batch: 22DSK033W

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	2.50		mg/L		100	30 - 160

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	94		60 - 130
HEXACOSANE	106		60 - 130

Lab Sample ID: 22J8K033WL
Matrix: WATER
Analysis Batch: 22DSK033W

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	2.85		mg/L		114	30 - 160

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	97		60 - 130
HEXACOSANE	105		60 - 130

QC Association Summary

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

Job ID: 380-28460-1

GC/MS Semi VOA

Prep Batch: 24775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-28460-1	HALAWA SHAFT	Total/NA	Drinking Water	525.2	
MB 380-24775/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-24775/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-24775/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-24775/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-28412-AY-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-28262-D-4-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 24806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-28460-1	HALAWA SHAFT	Total/NA	Drinking Water	525.2	24775
MB 380-24775/1-A	Method Blank	Total/NA	Water	525.2	24775
LCS 380-24775/3-A	Lab Control Sample	Total/NA	Water	525.2	24775
LCSD 380-24775/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	24775
MRL 380-24775/2-A	Lab Control Sample	Total/NA	Water	525.2	24775
380-28412-AY-1-A MS	Matrix Spike	Total/NA	Water	525.2	24775
380-28262-D-4-A DU	Duplicate	Total/NA	Water	525.2	24775

Subcontract

Analysis Batch: O-40028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-28460-1	HALAWA SHAFT	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40028_P
101914-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40028_P
101914-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40028_P
101914-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40028_P

Analysis Batch: 22DSK033W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-28460-1	HALAWA SHAFT	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
22DSK033WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
22DSK033WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
22J5K033WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
22J8K033WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 22VGH7K10

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-28460-1	HALAWA SHAFT	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

Eurofins Eaton Monrovia

QC Association Summary

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

Job ID: 380-28460-1

Subcontract (Continued)

Analysis Batch: 22VGH7K10 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-28460-2	TB HALAWA SHAFT	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
22VGH7K10B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22VGH7K10L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40028_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-28460-1	HALAWA SHAFT	Total/NA	Drinking Water	EPA_625	
101914-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
101914-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
101914-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	



Lab Chronicle

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

Job ID: 380-28460-1

Client Sample ID: HALAWA SHAFT

Lab Sample ID: 380-28460-1

Date Collected: 11/14/22 09:30

Matrix: Drinking Water

Date Received: 11/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			24775	N8NE	EA MON	11/19/22 12:15
Total/NA	Analysis	525.2		1	24806	Q8LA	EA MON	11/21/22 20:57
Total/NA	Prep	EPA_625		1	O-40028_P			11/21/22 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40028	YC		12/03/22 09:45
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VGH7K10	SCerva		11/18/22 04:25
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	22DSK033W	SDees		11/22/22 18:47

Client Sample ID: TB HALAWA SHAFT

Lab Sample ID: 380-28460-2

Date Collected: 11/14/22 09:30

Matrix: Water

Date Received: 11/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VGH7K10	SCerva		11/18/22 05:01

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: Rush Weekly RED-HILL

Job ID: 380-28460-1

Laboratory: Eurofins Eaton Monrovia

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

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

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

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

Accreditation/Certification Summary

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

Job ID: 380-28460-1

Laboratory: Eurofins Eaton Monrovia (Continued)

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

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

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

Method Summary

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

Job ID: 380-28460-1

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: Rush Weekly RED-HILL

Job ID: 380-28460-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-28460-1	HALAWA SHAFT	Drinking Water	11/14/22 09:30	11/16/22 10:00	HI0000331
380-28460-2	TB HALAWA SHAFT	Water	11/14/22 09:30	11/16/22 10:00	

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



Date: 12-13-2022
EMAX Batch No.: 22K200

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-28460

Enclosed is the Laboratory report for samples received on 11/17/22.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-28460-1	K200-01	11/14/22	WATER	TPH GASOLINE TPH
380-28460-2	K200-02	11/14/22	WATER	TPH GASOLINE

The results are summarized on the following pages.

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

Sincerely yours,


Caspar J. Pang
Laboratory Director

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

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

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

Chain of Custody Record

22K200



Environment Testing

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

Client Information (Sub Contract Lab)

Client Contact: Rachelle Arada
 Shipping/Receiving: Rachelle Arada@et.eurofins.com
 Company: EMAX Laboratories Inc
 Address: 3051 Fujita Street, Torrance, CA, 90505
 City: Torrance
 State Zip: CA, 90505
 Phone: [blank]
 Email: [blank]
 Project Name: RED-HILL
 Project #: 38001111
 Site: Honolulu BWS Sites

Sampler: Arada, Rachelle
 Lab PM: Rachelle Arada@et.eurofins.com
 E-Mail: Rachelle Arada@et.eurofins.com
 State of Origin: Hawaii

Accreditations Required (See note): State - Hawaii

Garner Tracking No(s): 380-28480-1
 Job #: 380-28480-1
 Page: 1 of 1

COG No: 380-284811.1
 Page: 1 of 1

Analysis Requested

Due Date Requested: 12/1/2022
 TAT Requested (days): [blank]

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

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 - EDTA
 M - Hexane
 N - None
 O - AsNaO2
 P - Na2O4S
 Q - Na2SO3
 R - Na2S2O3
 S - H2SO4
 T - TSP Dodecahydrate
 U - Acetone
 V - MeCA
 W - pH 4-5
 Y - Trizma
 Z - other (specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Seawater, Other (Specify))	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
HALAWA SHAFT (380-28460-1)	11/14/22	09:30	Water	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6	See Attached Instructions
TB HALAWA SHAFT (380-28460-2)	11/14/22	09:30	Water	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	See Attached Instructions

Possible Hazard Identification

Deliverable Requested: I, II, III, IV, Other (specify) _____
 Primary Deliverable Rank: 2

Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: _____ Date/Time: _____ Company: _____
 Relinquished by: _____ Date/Time: _____ Company: _____

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

Special Instructions/QC Requirements: _____
 Method of Shipment: _____

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

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

Received by: _____ Date/Time: 11-17-22 14:15
 Received by: _____ Date/Time: 11-17-22 13:00
 Received by: _____ Date/Time: 11-17-22 14:15

Company: EMAX
 Company: EMAX
 Company: EMAX

Cooler Temperature(s) °C and Other Remarks: Temp. 5.5



Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others	Airbill / Tracking Number	ECN <u>22K200</u>
<input type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery		Recipient <u>Maria Rivera</u>
		Date <u>11/17/22</u> Time <u>14:15</u>

COC INSPECTION

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

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 <u>5.5</u> °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
Thermometer:	A - S/N _____	B - S/N <u>210760237</u>	C - S/N _____
			D - S/N <u>210760272</u>

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<u>2</u>	<u>718</u>	<u>D22</u>	<u>2nd Date reads 11/8/22</u>	<u>R1</u>
<i>am/11/22</i>				
<i>MB 11/21/22</i>				

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

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? YES NO

LEGEND:

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

REVIEWS:

Sample Labeling Maria Rivera Repecho SRF Repecho
 Date 11/17/22 11/17/22 Date 11/17/22

PM MB
 Date 11/21/22



AREA FAST
COURIER SERVICE

1146 N. Central Ave., #444 • Glendale, CA 91202
Phone: 818/ 497-4474

INVOICE 20135

CALL NO _____

REF. NO _____

DATE 11-17-22

CHARGE TO EUROFINS

FROM: Enton Anuly TO: EUROFINS
Monrovia 3055 FUSITO
Terrence

PACKAGES	DESCRIPTION	REGULAR	RUSH	A.S.A.P.	MISC. CHARGES	WAITING TIME	WEIGHT	TOTAL CHARGE
1	1 Corrosive							

DRIVER: Alan P PICK UP TIME: 11/17/22 14:15 DELIVERY TIME: 14:10

Received By: _____



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

380-28460

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

SDG#: 22K200



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-28460

SDG : 22K200

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

A total of two(2) water samples were received on 11/17/22 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. VGH7K10B - 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. VGH7K10L/VGH7K10C 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 K180-01M/K180-01S. 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 : 380-28460
 SDG NO. : 22K200
 Instrument ID : H7

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

FN - Filename
 % Moist - Percent Moisture

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

SAMPLE RESULTS

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

```
=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 11/14/22 09:30
Project     : 380-28460                   Date Received: 11/17/22
Batch No.   : 22K200                       Date Extracted: 11/18/22 04:25
Sample ID   : 380-28460-1                 Date Analyzed: 11/18/22 04:25
Lab Samp ID: K200-01                       Dilution Factor: 1
Lab File ID: AK17032A                       Matrix: WATER
Ext Btch ID: 22VGH7K10                     % Moisture: NA
Calib. Ref.: AK17026A                     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	0.0352	0.0400	88	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: 11/14/22 09:30
Project     : 380-28460                   Date Received: 11/17/22
Batch No.   : 22K200                       Date Extracted: 11/18/22 05:01
Sample ID   : 380-28460-2                 Date Analyzed: 11/18/22 05:01
Lab Samp ID: K200-02                       Dilution Factor: 1
Lab File ID: AK17033A                       Matrix: WATER
Ext Btch ID: 22VGH7K10                     % Moisture: NA
Calib. Ref.: AK17026A                       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	0.0338	0.0400	85	60-140

Notes:

Parameter H-C Range

Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml

Final Volume : 5ml

Prepared by : SCerva

Analyzed by : SCerva

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QC SUMMARIES

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 11/17/22 12:00
Project     : 380-28460                   Date Received: 11/17/22
Batch No.   : 22K200                       Date Extracted: 11/17/22 12:00
Sample ID   : MBLK1W                       Date Analyzed: 11/17/22 12:00
Lab Samp ID: VGH7K10B                     Dilution Factor: 1
Lab File ID: AK17005A                     Matrix: WATER
Ext Btch ID: 22VGH7K10                   % Moisture: NA
Calib. Ref.: AK17004A                   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	0.0338	0.0400	84	60-140

Notes:

Parameter H-C Range

Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml

Final Volume : 5ml

Prepared by : SCerva

Analyzed by : SCerva

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-28460
BATCH NO. : 22K200
METHOD : 5030B/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID : VGH7K10B	VGH7K10L	VGH7K10C
LAB FILE ID : AK17005A	AK17006A	AK17007A
DATE PREPARED : 11/17/22 12:00	11/17/22 12:38	11/17/22 13:15
DATE ANALYZED : 11/17/22 12:00	11/17/22 12:38	11/17/22 13:15
PREP BATCH : 22VGH7K10	22VGH7K10	22VGH7K10
CALIBRATION REF: AK17004A	AK17004A	AK17004A

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	0.441	88	0.500	0.433	87	2	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0396	99	0.0400	0.0442	111	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 : 380-28262
BATCH NO. : 22K180
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-28262-1	380-28262-1MS	380-28262-1MSD
LAB SAMPLE ID	: K180-01	K180-01M	K180-01S
LAB FILE ID	: AK17016A	AK17017A	AK17018A
DATE PREPARED	: 11/17/22 18:44	11/17/22 19:20	11/17/22 19:57
DATE ANALYZED	: 11/17/22 18:44	11/17/22 19:20	11/17/22 19:57
PREP BATCH	: 22VGH7K10	22VGH7K10	22VGH7K10
CALIBRATION REF:	AK17015A	AK17015A	AK17015A

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	0.455	91	0.500	0.457	91	0	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0478	120	0.0400	0.0472	118	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-28460

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 22K200



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-28460

SDG : 22K200

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 11/17/22 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. DSK033WB - 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. DSK033WL/DSK033WC 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: 380-28460

SDG : 22K200

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 11/17/22 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. DSK033WB - 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. J5K033WL/J5K033WC 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: 380-28460

SDG : 22K200

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 11/17/22 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. DSK033WB - 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. J8K033WL/J8K033WC 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 : 380-28460
=====
SDG NO. : 22K200
Instrument ID : D5
=====

```

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Prep. Data FN	Notes
	WATER							
MBLK1W	DSK033WB	1	NA	11/22/2214:47	11/21/2215:45	LK22009A	LK22003A	22DSK033W Method Blank
LCS1W	DSK033WL	1	NA	11/22/2215:05	11/21/2215:45	LK22010A	LK22003A	22DSK033W Lab Control Sample (LCS)
LCD1W	DSK033WC	1	NA	11/22/2215:24	11/21/2215:45	LK22011A	LK22003A	22DSK033W LCS Duplicate
380-28460-1	K200-01	1	NA	11/22/2218:47	11/21/2215:45	LK22022A	LK22003A	22DSK033W Field Sample

FN - Filename
% Moist - Percent Moisture



LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL
Project    : 380-28460
SDG NO.   : 22K200
Instrument ID : D5
=====
  
```

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Prep. Data FN	Notes
								WATER
MBLK1W	DSK033WB	1	NA	11/22/2214:47	11/21/2215:45	LK22009A	LK22004A	22DSK033W Method Blank
LCS1W	J5K033WL	1	NA	11/22/2215:42	11/21/2215:45	LK22012A	LK22004A	22DSK033W Lab Control Sample (LCS)
LCD1W	J5K033WC	1	NA	11/22/2216:01	11/21/2215:45	LK22013A	LK22004A	22DSK033W LCS Duplicate
380-28460-1	K200-01	1	NA	11/22/2218:47	11/21/2215:45	LK22022A	LK22004A	22DSK033W Field Sample

FN - Filename
% Moist - Percent Moisture



LAB CHRONICLE
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-28460
 SDG NO. : 22K200
 Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Prep. Data FN	Notes
MBLK1W	DSK033WB	1	NA	11/22/2214:47	11/21/2215:45	LK22009A	LK22005A	22DSK033W Method Blank
LCS1W	J8K033WL	1	NA	11/22/2216:19	11/21/2215:45	LK22014A	LK22005A	22DSK033W Lab Control Sample (LCS)
LCD1W	J8K033WC	1	NA	11/22/2216:38	11/21/2215:45	LK22015A	LK22005A	22DSK033W LCS Duplicate
380-28460-1	K200-01	1	NA	11/22/2218:47	11/21/2215:45	LK22022A	LK22005A	22DSK033W Field Sample

FN - Filename
 % Moist - Percent Moisture



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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : EUROFINS EATON ANALYTICAL Date Collected: 11/14/22 09:30
Project : 380-28460 Date Received: 11/17/22
Batch No. : 22K200 Date Extracted: 11/21/22 15:45
Sample ID : 380-28460-1 Date Analyzed: 11/22/22 18:47
Lab Samp ID: 22K200-01 Dilution Factor: 1
Lab File ID: LK22022A Matrix: WATER
Ext Btch ID: 22DSK033W % Moisture: NA
Calib. Ref.: LK22003A Instrument ID: D5
=====

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.027	0.014	
Motor Oil	ND	0.054	0.027	

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.476	0.540	88	60-130
Hexacosane	0.140	0.135	104	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 : 930ml Final Volume : 5ml
Prepared by : POrto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 11/14/22 09:30
Project     : 380-28460                 Date Received: 11/17/22
Batch No.   : 22K200                    Date Extracted: 11/21/22 15:45
Sample ID   : 380-28460-1              Date Analyzed: 11/22/22 18:47
Lab Samp ID : 22K200-01                 Dilution Factor: 1
Lab File ID : LK22022A                  Matrix: WATER
Ext Btch ID : 22DSK033W                 % Moisture: NA
Calib. Ref. : LK22004A                  Instrument ID: D5
=====
  
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.054	0.027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.476	0.540	88	60-130
Hexacosane	0.140	0.135	104	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 : 930ml Final Volume : 5ml
 Prepared by : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 11/14/22 09:30
Project     : 380-28460                   Date Received: 11/17/22
Batch No.   : 22K200                       Date Extracted: 11/21/22 15:45
Sample ID   : 380-28460-1                 Date Analyzed: 11/22/22 18:47
Lab Samp ID: 22K200-01                     Dilution Factor: 1
Lab File ID: LK22022A                       Matrix: WATER
Ext Btch ID: 22DSK033W                     % Moisture: NA
Calib. Ref.: LK22005A                       Instrument ID: D5
=====
    
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.054	0.027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.476	0.540	88	60-130
Hexacosane	0.140	0.135	104	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 : 930ml

Final Volume : 5ml

Prepared by : POreto

Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL    Date Collected: 11/21/22 15:45
Project    : 380-28460                    Date Received: 11/21/22
Batch No.  : 22K200                       Date Extracted: 11/21/22 15:45
Sample ID  : MBLK1W                       Date Analyzed: 11/22/22 14:47
Lab Samp ID: DSK033WB                    Dilution Factor: 1
Lab File ID: LK22009A                    Matrix: WATER
Ext Btch ID: 22DSK033W                   % Moisture: NA
Calib. Ref.: LK22003A                    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	0.499	0.500	100	60-130
Hexacosane	0.135	0.125	108	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 : POrto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-28460
BATCH NO. : 22K200
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSK033WB	DSK033WL	DSK033WC
LAB FILE ID	: LK22009A	LK22010A	LK22011A
DATE PREPARED	: 11/21/22 15:45	11/21/22 15:45	11/21/22 15:45
DATE ANALYZED	: 11/22/22 14:47	11/22/22 15:05	11/22/22 15:24
PREP BATCH	: 22DSK033W	22DSK033W	22DSK033W
CALIBRATION REF:	LK22003A	LK22003A	LK22003A

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	2.84	114	2.50	2.59	104	9	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.522	104	0.500	0.493	99	60-130
Hexacosane	0.125	0.147	118	0.125	0.133	106	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: 11/21/22 15:45
Project     : 380-28460                   Date Received: 11/21/22
Batch No.   : 22K200                       Date Extracted: 11/21/22 15:45
Sample ID   : MBLK1W                       Date Analyzed: 11/22/22 14:47
Lab Samp ID: DSK033WB                      Dilution Factor: 1
Lab File ID: LK22009A                      Matrix: WATER
Ext Btch ID: 22DSK033W                    % Moisture: NA
Calib. Ref.: LK22004A                    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	0.499	0.500	100	60-130
Hexacosane	0.135	0.125	108	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 : POrreto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-28460
BATCH NO. : 22K200
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSK033WB	J5K033WL	J5K033WC
LAB FILE ID	: LK22009A	LK22012A	LK22013A
DATE PREPARED	: 11/21/22 15:45	11/21/22 15:45	11/21/22 15:45
DATE ANALYZED	: 11/22/22 14:47	11/22/22 15:42	11/22/22 16:01
PREP BATCH	: 22DSK033W	22DSK033W	22DSK033W
CALIBRATION REF:	LK22004A	LK22004A	LK22004A

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	2.50	100	2.50	2.48	99	1	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.472	94	0.500	0.496	99	60-130
Hexacosane	0.125	0.132	106	0.125	0.136	109	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: 11/21/22 15:45
Project    : 380-28460                   Date Received: 11/21/22
Batch No.  : 22K200                       Date Extracted: 11/21/22 15:45
Sample ID  : MBLK1W                       Date Analyzed: 11/22/22 14:47
Lab Samp ID: DSK033WB                     Dilution Factor: 1
Lab File ID: LK22009A                     Matrix: WATER
Ext Btch ID: 22DSK033W                   % Moisture: NA
Calib. Ref.: LK22005A                     Instrument ID: D5
=====
    
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JPB	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.499	0.500	100	60-130
Hexacosane	0.135	0.125	108	60-130

Notes:

RL : Reporting Limit
 Parameter H-C Range
 JPB 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 : P0reto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-28460
BATCH NO. : 22K200
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSK033WB	J8K033WL	J8K033WC
LAB FILE ID	: LK22009A	LK22014A	LK22015A
DATE PREPARED	: 11/21/22 15:45	11/21/22 15:45	11/21/22 15:45
DATE ANALYZED	: 11/22/22 14:47	11/22/22 16:19	11/22/22 16:38
PREP BATCH	: 22DSK033W	22DSK033W	22DSK033W
CALIBRATION REF:	LK22005A	LK22005A	LK22005A

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	2.85	114	2.50	2.59	104	10	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	0.500	100	60-130
Hexacosane	0.125	0.131	105	0.125	0.131	105	60-130

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

December 08, 2022

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

Project Name: RED-HILL Project # 38001111 Job # 380-28460-1
Physis Project ID: 1407003-339

Dear Rosalynn,


Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 11/17/2022. 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: 1407003-339

RED-HILL Project # 38001111 Job # 380-28460-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
101915	HALAWA SHAFT	380-28460-1	11/14/202	9:30	Samplewater	Not Specified



ABBREVIATIONS and ACRONYMS

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

QUALITY ASSURANCE SUMMARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PHYSIS QUALIFIER CODES

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

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

BIOPHARMACEUTICALS ANALYTICAL REPOR

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 101915-R1	HALAWA SHAFT 380-28460-1		Matrix: Samplewater				Sampled: 14-Nov-22 9:30			Received: 17-Nov-22	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40028	21-Nov-22	03-Dec-22



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 101915-R1	HALAWA SHAFT 380-28460-1	Matrix: Samplewater					Sampled: 14-Nov-22 9:30			Received: 17-Nov-22	
(d10-Acenaphthene)	EPA 625.1	% Recovery	92	1			Total		O-40028	21-Nov-22	03-Dec-22
(d10-Phenanthrene)	EPA 625.1	% Recovery	91	1			Total		O-40028	21-Nov-22	03-Dec-22
(d12-Chrysene)	EPA 625.1	% Recovery	88	1			Total		O-40028	21-Nov-22	03-Dec-22
(d12-Perylene)	EPA 625.1	% Recovery	89	1			Total		O-40028	21-Nov-22	03-Dec-22
(d8-Naphthalene)	EPA 625.1	% Recovery	86	1			Total		O-40028	21-Nov-22	03-Dec-22
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40028	21-Nov-22	03-Dec-22



QUALITY CONTROL REPORT

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Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Sample ID: 101914-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-40028			Prepared: 21-Nov-22		Analyzed: 03-Dec-22			
Disalicylideneprapanediamin	Total	ND	1	0.05	0.1	µg/L							
Sample ID: 101914-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-40028			Prepared: 21-Nov-22		Analyzed: 03-Dec-22			
Disalicylideneprapanediamin	Total	28.3	1	0.05	0.1	µg/L	50	0	57	50 - 150%	PASS		
Sample ID: 101914-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-40028			Prepared: 21-Nov-22		Analyzed: 03-Dec-22			
Disalicylideneprapanediamin	Total	34.4	1	0.05	0.1	µg/L	50	0	69	50 - 150%	PASS	19	30 PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 101914-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-40028		Prepared: 21-Nov-22		Analyzed: 03-Dec-22					
(d10-Acenaphthene)	Total	71	1			% Recovery	100	71	27 - 133%	PASS	
(d10-Phenanthrene)	Total	92	1			% Recovery	100	92	43 - 129%	PASS	
(d12-Chrysene)	Total	92	1			% Recovery	100	92	52 - 144%	PASS	
(d12-Perylene)	Total	82	1			% Recovery	100	82	36 - 161%	PASS	
(d8-Naphthalene)	Total	81	1			% Recovery	100	81	25 - 125%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L					
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L					
Anthracene	Total	ND	1	0.001	0.005	µg/L					
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L					
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L					
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Biphenyl	Total	ND	1	0.001	0.005	µg/L					
Chrysene	Total	ND	1	0.001	0.005	µg/L					
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L					
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L					
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L					

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

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



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 101914-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-40028			Prepared: 21-Nov-22		Analyzed: 03-Dec-22					
(d10-Acenaphthene)	Total	76	1			% Recovery	100	0	76	27 - 133%	PASS	
(d10-Phenanthrene)	Total	83	1			% Recovery	100	0	83	43 - 129%	PASS	
(d12-Chrysene)	Total	74	1			% Recovery	100	0	74	52 - 144%	PASS	
(d12-Perylene)	Total	81	1			% Recovery	100	0	81	36 - 161%	PASS	
(d8-Naphthalene)	Total	78	1			% Recovery	100	0	78	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.382	1	0.001	0.005	µg/L	0.5	0	76	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.368	1	0.001	0.005	µg/L	0.5	0	74	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.397	1	0.001	0.005	µg/L	0.5	0	79	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.404	1	0.001	0.005	µg/L	0.5	0	81	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.385	1	0.001	0.005	µg/L	0.5	0	77	47 - 130%	PASS	
Acenaphthene	Total	0.335	1	0.001	0.005	µg/L	0.5	0	67	53 - 131%	PASS	
Acenaphthylene	Total	0.386	1	0.001	0.005	µg/L	0.5	0	77	43 - 140%	PASS	
Anthracene	Total	0.4	1	0.001	0.005	µg/L	0.5	0	80	58 - 135%	PASS	
Benz[a]anthracene	Total	0.389	1	0.001	0.005	µg/L	0.5	0	78	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.386	1	0.001	0.005	µg/L	0.5	0	77	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.542	1	0.001	0.005	µg/L	0.5	0	108	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.485	1	0.001	0.005	µg/L	0.5	0	97	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.389	1	0.001	0.005	µg/L	0.5	0	78	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	56 - 145%	PASS	
Biphenyl	Total	0.401	1	0.001	0.005	µg/L	0.5	0	80	56 - 119%	PASS	
Chrysene	Total	0.339	1	0.001	0.005	µg/L	0.5	0	68	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.508	1	0.001	0.005	µg/L	0.5	0	102	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.344	1	0.001	0.005	µg/L	0.5	0	69	50 - 150%	PASS	
Dibenzothiophene	Total	0.419	1	0.001	0.005	µg/L	0.5	0	84	75 - 113%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	0.428	1	0.001	0.005	µg/L	0.5	0	86	60 - 146%	PASS		
Fluorene	Total	0.4	1	0.001	0.005	µg/L	0.5	0	80	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.525	1	0.001	0.005	µg/L	0.5	0	105	50 - 151%	PASS		
Naphthalene	Total	0.373	1	0.001	0.005	µg/L	0.5	0	75	41 - 126%	PASS		
Perylene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	48 - 141%	PASS		
Phenanthrene	Total	0.416	1	0.001	0.005	µg/L	0.5	0	83	67 - 127%	PASS		
Pyrene	Total	0.426	1	0.001	0.005	µg/L	0.5	0	85	54 - 156%	PASS		

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc		
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 101914-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:				
Method: EPA 625.1		Batch ID: O-40028			Prepared: 21-Nov-22			Analyzed: 03-Dec-22							
(d10-Acenaphthene)	Total	78	1				% Recovery	100	0	78	27 - 133%	PASS	3	30	PASS
(d10-Phenanthrene)	Total	96	1				% Recovery	100	0	96	43 - 129%	PASS	15	30	PASS
(d12-Chrysene)	Total	87	1				% Recovery	100	0	87	52 - 144%	PASS	16	30	PASS
(d12-Perylene)	Total	97	1				% Recovery	100	0	97	36 - 161%	PASS	18	30	PASS
(d8-Naphthalene)	Total	74	1				% Recovery	100	0	74	25 - 125%	PASS	5	30	PASS
1-Methylnaphthalene	Total	0.34	1	0.001	0.005	µg/L		0.5	0	68	31 - 128%	PASS	11	30	PASS
1-Methylphenanthrene	Total	0.482	1	0.001	0.005	µg/L		0.5	0	96	66 - 127%	PASS	26	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.44	1	0.001	0.005	µg/L		0.5	0	88	55 - 122%	PASS	11	30	PASS
2,6-Dimethylnaphthalene	Total	0.337	1	0.001	0.005	µg/L		0.5	0	67	48 - 120%	PASS	19	30	PASS
2-Methylnaphthalene	Total	0.351	1	0.001	0.005	µg/L		0.5	0	70	47 - 130%	PASS	10	30	PASS
Acenaphthene	Total	0.382	1	0.001	0.005	µg/L		0.5	0	76	53 - 131%	PASS	13	30	PASS
Acenaphthylene	Total	0.353	1	0.001	0.005	µg/L		0.5	0	71	43 - 140%	PASS	8	30	PASS
Anthracene	Total	0.446	1	0.001	0.005	µg/L		0.5	0	89	58 - 135%	PASS	11	30	PASS
Benz[a]anthracene	Total	0.461	1	0.001	0.005	µg/L		0.5	0	92	55 - 145%	PASS	16	30	PASS
Benzo[a]pyrene	Total	0.438	1	0.001	0.005	µg/L		0.5	0	88	51 - 143%	PASS	13	30	PASS
Benzo[b]fluoranthene	Total	0.602	1	0.001	0.005	µg/L		0.5	0	120	46 - 165%	PASS	11	30	PASS
Benzo[e]pyrene	Total	0.557	1	0.001	0.005	µg/L		0.5	0	111	42 - 152%	PASS	13	30	PASS
Benzo[g,h,i]perylene	Total	0.434	1	0.001	0.005	µg/L		0.5	0	87	63 - 133%	PASS	11	30	PASS
Benzo[k]fluoranthene	Total	0.53	1	0.001	0.005	µg/L		0.5	0	106	56 - 145%	PASS	10	30	PASS
Biphenyl	Total	0.319	1	0.001	0.005	µg/L		0.5	0	64	56 - 119%	PASS	22	30	PASS
Chrysene	Total	0.391	1	0.001	0.005	µg/L		0.5	0	78	56 - 141%	PASS	14	30	PASS
Dibenz[a,h]anthracene	Total	0.572	1	0.001	0.005	µg/L		0.5	0	114	55 - 150%	PASS	11	30	PASS
Dibenzo[a,l]pyrene	Total	0.397	1	0.001	0.005	µg/L		0.5	0	79	50 - 150%	PASS	14	30	PASS
Dibenzothiophene	Total	0.467	1	0.001	0.005	µg/L		0.5	0	93	75 - 113%	PASS	10	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODEc
									%	LIMITS	%	LIMITS	
Fluoranthene	Total	0.477	1	0.001	0.005	µg/L	0.5	0	95	60 - 146%	PASS	10 30	PASS
Fluorene	Total	0.443	1	0.001	0.005	µg/L	0.5	0	89	58 - 131%	PASS	11 30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.593	1	0.001	0.005	µg/L	0.5	0	119	50 - 151%	PASS	12 30	PASS
Naphthalene	Total	0.343	1	0.001	0.005	µg/L	0.5	0	69	41 - 126%	PASS	8 30	PASS
Perylene	Total	0.493	1	0.001	0.005	µg/L	0.5	0	99	48 - 141%	PASS	12 30	PASS
Phenanthrene	Total	0.463	1	0.001	0.005	µg/L	0.5	0	93	67 - 127%	PASS	11 30	PASS
Pyrene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	54 - 156%	PASS	12 30	PASS



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PHYSIS

TENTATIVELY

IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 101915

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
28.9849	7.8347	1111	Anthracene-D10-	1719-06-8	96
26.2670	2.1631	307	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
10.4350	1.9406	275	Succinimide	123-56-8	99
11.0541	0.7473	106	Benzoic acid	65-85-0	94

Concentration estimated using the response for Anthracene-d10

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Sample ID: Lab Blank Batch O-40028

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
28.9887	7.8272	1111	Anthracene-D10-	1719-06-8	97
26.2813	17.9453	2547	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98

Concentration estimated using the response for Anthracene-d10

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PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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750 Royal Oaks Drive Suite 100
 Monrovia, CA 91018
 Phone: 626-398-1100

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab P/N:	Carrier Tracking No(s):		COC No:		
Client Contact:		Phone:	Arada, Rachelle	State of Origin:		360-28614.1		
Shipping/Receiving:		E-Mail: Rachelle.Arada@eurofins.com		Hawaii		Page 1 of 1		
Company:		Accreditations Requirer (See note):		Job #:		360-28460-1		
Address:		Due Date Requested:	Analysis Requested					
1904 Wright Circle,		12/1/2022	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs					
City:		TAT Requested (days):	Field Filtered Sample (Yes or No)					
Anaheim			Perform MS/MSD (Yes or No)					
State, Zip:			X					
CA, 92806			Total Number of containers					
Phone:			2					
PO #:			Special Instructions/Note:					
PO #:			See Attached Instructions					
Email:			Preservation Codes:					
Project Name:			A - HCL					
REO-HILL			B - NiCl					
Site:			C - Zn Acetate					
Honolulu BWS Sites			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 Docetohydrate					
			U - Acetone					
			V - MCAA					
			W - PH 4.5					
			Y - Trizma					
			Z - other (specify)					
Other:								
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Element, Organic, Inorganic, AAR)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Special Instructions/Note:
HALAWA SHAFT (380-28460-1)		11/14/22	09:30	Water	Water		X	

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/assess/analyze 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

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

Relinquished by: Date/Time: Company: Received by: Date/Time: Company:

Relinquished by: Date/Time: Company: Received by: Date/Time: Company:

Custody Seals Intact: Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Project Iteration ID: 1407003-339
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-28460-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: [Signature]
2. Date Received: 11/17/22
3. Time Received: 1525
4. Client Name: Eurofins
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 2.3
 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: [Signature]

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



Environment Testing

Client Information				Sampler: <i>OldHorne</i>	Lab PM: Arada, Rachele	Carrier Tracking No(s):	COC No: 380-9763-2757.1		
Client Contact: Dr. Ron Fenstermacher				Phone: <i>808 748 5840</i>	E-Mail: Rachele.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 3		
Company: City & County of Honolulu				PWSID:	Analysis Requested			Job #:	
Address: 630 South Beretania Street Chemistry Lab				Due Date Requested:				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 525.2_PREC - (MOD) 525plus Plus TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Total Number of containers
City: Honolulu				TAT Requested (days):					
State, Zip: HI, 96843				Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No					
Phone: 808-748-5091(Tel)				PO #: C20525101 exp 05312023					
Email: RFENSTEMACHER@hbws.org				WO #:					
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill				Project #: 38001111					
Site: Hawaii				SSOW#:					
Sample Identification				Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oli, BT=Tissue, A=Air)	Special Instructions/Note:	
				Preservation Code:					
AIEA GULCH WELLS PUMP 1							Water		
AIEA GULCH WELLS PUMP 2							Water		
AIEA WELLS PUMPS 1&2 (260)							Water		
HALAWA SHAFT							Water		
HALAWA WELLS UNITS 1&2							Water		
MOANALUA WELLS							Water		
AIEA GULCH WELLS PUMP 1							Water		
AIEA GULCH WELLS PUMP 2							Water		
AIEA WELLS PUMPS 1&2 (260)							Water	380-28460 COC	
HALAWA SHAFT							Water		
HALAWA WELLS UNITS 1&2							Water		
Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements:					
Empty Kit Relinquished by:				Date:	Time:	Method of Shipment: <i>FED EX : 7704 9835 8536</i>			
Relinquished by: [Redacted]				Date/Time: <i>11-14-22 11:00</i>	Company:	Received by: <i>A G PEITNER</i>	Date/Time: <i>11/16/2022 10:00</i>	Company: <i>FEA</i>	
Relinquished by:				Date/Time:	Company:	Received by:	Date/Time:	Company:	
Relinquished by:				Date/Time:	Company:	Received by:	Date/Time:	Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No				Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks: <i>(G30A) 2.0°-1.9° GEL-FROZEN</i>	

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DOUBLE
51020

Monrovia, CA (Suite 100)

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

Chain of Custody Record

COPY



Environment Testing

Client Information		Sampler: <i>Old Napa, OFF 11-14-22</i>		Lab PM: Arada, Rachelle		Carrier Tracking No(s):		COC No: 380-9763-2757.2					
Client Contact: Dr. Ron Fenstemacher		Phone: <i>808-748-5840</i>		E-Mail: Rachelle.Arada@et.eurofinsus.com		State of Origin:		Page: Page 2 of 3					
Company: City & County of Honolulu		FWSID: <i>5</i>		Analysis Requested						Job #:			
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:		Field Filtered Sample (Yes or No) <input type="checkbox"/> Refill (MS/MSD) (Yes or No) <input type="checkbox"/> SUBCONTRACT - 825 PAH Physis LL (EAL) + TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> 525.2_Prec - (MOD) 525plus Plus TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/>						Preservation Codes:			
City: Honolulu		TAT Requested (days):								A - HCL		M - Hexane	
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No								B - NaOH		N - None	
Phone: 808-748-5091(Tel)		PO #: C20525101 exp 05312023								C - Zn Acetate		O - AsNaO2	
Email: Rfenstemacher@hbws.org		WO #:								D - Nitric Acid		P - Na2O4S	
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111		E - NaHSO4		Q - Na2SO3		R - Na2SO3					
Site: Hawaii		SSOW#:		F - MeOH		S - H2SO4		T - TSP Dodecahydrate					
				G - Amchlor		U - Acetone		Other:					
				H - Ascorbic Acid		V - MCAA							
				I - Ice		W - pH 4-5							
				J - DI Water		Y - Trizma							
				K - EDTA		Z - other (specify)							
				L - EDA									
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Total Number of containers		Special Instructions/Note:	
						Preservation Code:		<input checked="" type="checkbox"/> R <input type="checkbox"/> R <input type="checkbox"/> RA <input type="checkbox"/> RA					
MOANALUA WELLS								Water					
AIEA GULCH WELLS PUMP 1								Water					
AIEA GULCH WELLS PUMP 2								Water					
AIEA WELLS PUMPS 1&2 (260)								Water					
HALAWA SHAFT								Water					
HALAWA WELLS UNITS 1&2								Water					
MOANALUA WELLS								Water					
AIEA GULCH WELLS PUMP 1								Water					
AIEA GULCH WELLS PUMP 2								Water					
AIEA WELLS PUMPS 1&2 (260)								Water					
HALAWA SHAFT								Water					
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:							
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment: <i>FED EX 7704 9835 8536</i>					
Relinquished by: <i>[Signature]</i>		Date/Time: <i>11-14-22 1100</i>		Company:		Received by: <i>[Signature]</i>		Date/Time: <i>11/16/2022 10:00</i>		Company: <i>EEA</i>			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>(630A) 2.0°-1.9° GEL-FROZEN</i>									

Monrovia, CA (Suite 100)

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

Chain of Custody Record



Environment Testing

Client Information		Sampler: <i>Olaf Hoppe</i>		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-9763-2757.3						
Client Contact: Dr. Ron Fenstermacher		Phone: <i>808 748 5840</i>		E-Mail: Rachele.Arada@et.eurofinsus.com		State of Origin:		Page: Page 3 of 3						
Company: City & County of Honolulu		PWSID:		Analysis Requested						Job #:				
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:		Field Filtered Sample (Yes or No) <input type="checkbox"/> Perform MS/MSD (Yes or No) <input type="checkbox"/> SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/> SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil <input type="checkbox"/> 525.2_PREC - (MOD) 525plus Plus TICs <input type="checkbox"/> SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) <input type="checkbox"/>						Preservation Codes:				
City: Honolulu		TAT Requested (days):								M - Hexane		N - None		
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No								O - AsNaO2		P - Na2O4S		
Phone: 808-748-5091(Tel)		PO #:								Q - Na2SO3		R - Na2S2O3		
Email: RFENSTEMACHER@hbws.org		WO #:								S - H2SO4		T - TSP Dodecahydrate		
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111		U - Acetone		V - MCAA		W - pH 4-5						
Site: Hawaii		SSOW#:		Y - Trizma		Z - other (specify)		Other:						
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, 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	525.2_PREC - (MOD) 525plus Plus TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Total Number of containers	Special Instructions/Note:
				Preservation Code:										
HALAWA WELLS UNITS 1&2					Water									
MOANALUA WELLS					Water									
TB AIEA GULCH WELLS PUMP1					Water									
TB AIEA GULCH WELLS PUMP2					Water									
TB AIEA WELLS PUMPS 1&2 (260)					Water									
TB HALAWA SHAFT					Water						Z			
TB HALAWA WELLS UNITS 1&2					Water									
TB MOANALUA WELLS					Water									
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)								
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months								
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:								
Empty Kit Relinquished by:			Date:			Time:			Method of Shipment: <i>FED EX 7704 9835 8536</i>					
Relinquished by: <i>Olaf Hoppe</i>		Date/Time: <i>11-14-22 1100</i>		Company:		Received by: <i>AG 6 REITNER</i>		Date/Time: <i>11/16/2022 10:00</i>		Company: <i>EFA</i>				
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:				
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:				
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>(630A) 2.0°-1.9° GEL-FROZEN</i>										

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-28460-1

Login Number: 28460
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	No sample date and/or time on COC, logged in per container labels.
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	

