

ANALYTICAL REPORT

PREPARED FOR

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Honolulu, Hawaii 96843

Generated 8/27/2024 11:19:04 AM

JOB DESCRIPTION

RED-HILL
Weekly

JOB NUMBER

380-107731-1

Eurofins Eaton Analytical Pomona

Job Notes

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

Compliance Statement

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

Authorization



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Definitions/Glossary

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

Job ID: 380-107731-1
SDG: Weekly

Qualifiers

GC/MS Semi VOA

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

GC/MS Semi VOA TICs

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

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased

Glossary

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

Case Narrative

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

Job ID: 380-107731-1

Job ID: 380-107731-1

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Job Narrative 380-107731-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 8/8/2024 9:56 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.9°C, 1.2°C and 2.2°C.

GC/MS Semi VOA

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

Gasoline Range Organics

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

Diesel Range Organics

Method 8015B_DRO_LL_CS: The method reporting limit check (MRL) for preparation batch 570-469700 and analytical batch 570-471795 recovered outside control limits for the following analytes: C10-C28. These analytes were biased high in the MRL and were not detected in the associated samples; therefore, the data have been reported.

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

Detection Summary

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

Job ID: 380-107731-1
SDG: Weekly

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-107731-1

No Detections.

Client Sample ID: TRIP BLANK

Lab Sample ID: 380-107731-2

No Detections.

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This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-107731-1

Date Collected: 08/06/24 09:30

Matrix: Water

Date Received: 08/08/24 09:56

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
2,4'-DDE	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
2,4'-DDT	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
4,4'-DDD	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
4,4'-DDE	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
4,4'-DDT	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Acenaphthene	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Acenaphthylene	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Acetochlor	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Alachlor	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
alpha-BHC	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
alpha-Chlordane	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Anthracene	<0.020		0.020	ug/L		08/09/24 12:00	08/12/24 10:18	1
Atrazine	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Benz(a)anthracene	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Benzo[a]pyrene	<0.020		0.020	ug/L		08/09/24 12:00	08/12/24 10:18	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		08/09/24 12:00	08/12/24 10:18	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		08/09/24 12:00	08/12/24 10:18	1
beta-BHC	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		08/09/24 12:00	08/12/24 10:18	1
Aldrin	<0.0099		0.0099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Bromacil	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Butachlor	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Butylbenzylphthalate	<0.49		0.49	ug/L		08/09/24 12:00	08/12/24 10:18	1
Chlorobenzilate	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Chloroneb	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Chlorpyrifos	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Chrysene	<0.020		0.020	ug/L		08/09/24 12:00	08/12/24 10:18	1
delta-BHC	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		08/09/24 12:00	08/12/24 10:18	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Dieldrin	<0.0099		0.0099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Diethylphthalate	<0.49		0.49	ug/L		08/09/24 12:00	08/12/24 10:18	1
Dimethylphthalate	<0.49		0.49	ug/L		08/09/24 12:00	08/12/24 10:18	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		08/09/24 12:00	08/12/24 10:18	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Endosulfan sulfate	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Endrin	<0.0099		0.0099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Endrin aldehyde	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
EPTC	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Fluoranthene	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Fluorene	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-107731-1

Date Collected: 08/06/24 09:30

Matrix: Water

Date Received: 08/08/24 09:56

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
gamma-BHC (Lindane)	<0.0099		0.0099	ug/L		08/09/24 12:00	08/12/24 10:18	1
gamma-Chlordane	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Heptachlor	<0.0099		0.0099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Heptachlor epoxide (isomer B)	<0.0099	^3+	0.0099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Hexachlorobenzene	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Isophorone	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Malathion	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Methoxychlor	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Metolachlor	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Molinate	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Naphthalene	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Parathion	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Phenanthrene	<0.040		0.040	ug/L		08/09/24 12:00	08/12/24 10:18	1
Propachlor	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Pyrene	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Simazine	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Terbacil	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Terbutylazine	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Thiobencarb	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		08/09/24 12:00	08/12/24 10:18	1
trans-Nonachlor	<0.049		0.049	ug/L		08/09/24 12:00	08/12/24 10:18	1
Trifluralin	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
1-Methylnaphthalene	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1
2-Methylnaphthalene	<0.099		0.099	ug/L		08/09/24 12:00	08/12/24 10:18	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	08/09/24 12:00	08/12/24 10:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	100		70 - 130	08/09/24 12:00	08/12/24 10:18	1
Perylene-d12	98		70 - 130	08/09/24 12:00	08/12/24 10:18	1
Triphenylphosphate	103		70 - 130	08/09/24 12:00	08/12/24 10:18	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
2-Methylnaphthalene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Acenaphthene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Acenaphthylene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Anthracene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Benzo[a]anthracene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Benzo[a]pyrene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Benzo[b]fluoranthene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Benzo[g,h,i]perylene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Benzo[k]fluoranthene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Chrysene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Dibenz(a,h)anthracene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-107731-1

Date Collected: 08/06/24 09:30

Matrix: Water

Date Received: 08/08/24 09:56

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Fluorene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Indeno[1,2,3-cd]pyrene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Naphthalene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Phenanthrene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1
Pyrene	<0.19		0.19	ug/L		08/12/24 08:05	08/15/24 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	83		28 - 127	08/12/24 08:05	08/15/24 19:32	1
2-Fluorobiphenyl (Surr)	75		31 - 120	08/12/24 08:05	08/15/24 19:32	1
2-Fluorophenol (Surr)	45		17 - 120	08/12/24 08:05	08/15/24 19:32	1
Nitrobenzene-d5 (Surr)	73		27 - 120	08/12/24 08:05	08/15/24 19:32	1
Phenol-d6 (Surr)	28		10 - 120	08/12/24 08:05	08/15/24 19:32	1
p-Terphenyl-d14 (Surr)	87		45 - 120	08/12/24 08:05	08/15/24 19:32	1

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	08/12/24 08:05	08/20/24 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	64		33 - 139	08/12/24 08:05	08/20/24 15:54	1
2-Fluorobiphenyl (Surr)	72		33 - 126	08/12/24 08:05	08/20/24 15:54	1
2-Fluorophenol (Surr)	53		12 - 120	08/12/24 08:05	08/20/24 15:54	1
Nitrobenzene-d5 (Surr)	82		36 - 120	08/12/24 08:05	08/20/24 15:54	1
Phenol-d6 (Surr)	27		10 - 120	08/12/24 08:05	08/20/24 15:54	1
p-Terphenyl-d14 (Surr)	81		47 - 131	08/12/24 08:05	08/20/24 15:54	1

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			08/20/24 13:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	69		38 - 134		08/20/24 13:36	1

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<26		26	ug/L		08/11/24 22:13	08/17/24 16:13	1
Motor Oil Range Organics [C24-C36]	<26		26	ug/L		08/11/24 22:13	08/17/24 16:13	1
C8-C18	<26		26	ug/L		08/11/24 22:13	08/17/24 16:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	117		60 - 130	08/11/24 22:13	08/17/24 16:13	1

Client Sample ID: TRIP BLANK

Lab Sample ID: 380-107731-2

Date Collected: 08/06/24 09:30

Matrix: Water

Date Received: 08/08/24 09:56

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			08/19/24 15:21	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Client Sample ID: TRIP BLANK

Lab Sample ID: 380-107731-2

Date Collected: 08/06/24 09:30

Matrix: Water

Date Received: 08/08/24 09:56

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
4-Bromofluorobenzene (Surr)	72		38 - 134		08/19/24 15:21	1

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Action Limit Summary

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

Job ID: 380-107731-1
 SDG: Weekly

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-107731-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.0099		ug/L	2	0.0099	525.2	Total/NA
gamma-BHC (Lindane)	<0.0099		ug/L	0.2	0.0099	525.2	Total/NA
Heptachlor	<0.0099		ug/L	0.4	0.0099	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.0099	^3+	ug/L	0.2	0.0099	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Methoxychlor	<0.049		ug/L	40	0.049	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.19		ug/L	0.2	0.19	625.1 SIM	Total/NA

Surrogate Summary

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

Job ID: 380-107731-1
SDG: Weekly

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-107659-N-1-A MS	Matrix Spike	103	96	112
380-107731-1	Halawa Shaft Viewing Pool	100	98	103
380-107731-1 DU	Halawa Shaft Viewing Pool	101	89	107
LCS 380-103028/23-A	Lab Control Sample	102	101	110
LCSD 380-103028/24-A	Lab Control Sample Dup	99	98	110
MB 380-103028/21-A	Method Blank	101	97	109
MRL 380-103028/22-A	Lab Control Sample	95	97	109

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

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (33-139)	FBP (33-126)	2FP (12-120)	NBZ (36-120)	PHL6 (10-120)	TPHd14 (47-131)
380-107731-1	Halawa Shaft Viewing Pool	64	72	53	82	27	81
MB 570-469775/1-A	Method Blank	80	66	43	63	24	74

Surrogate Legend
 TBP = 2,4,6-Tribromophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 2FP = 2-Fluorophenol (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 PHL6 = Phenol-d6 (Surr)
 TPHd14 = p-Terphenyl-d14 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (28-127)	FBP (31-120)	2FP (17-120)	NBZ (27-120)	PHL6 (10-120)	TPHd14 (45-120)
380-107533-A-1-A MS	Matrix Spike	80	64	38	51	27	78
380-107533-A-1-B MSD	Matrix Spike Duplicate	80	64	37	49	26	82
380-107731-1	Halawa Shaft Viewing Pool	83	75	45	73	28	87
LCS 570-469775/2-A	Lab Control Sample	84	70	49	58	36	82
LCSD 570-469775/3-A	Lab Control Sample Dup	83	65	43	52	32	83
MB 570-469775/1-A	Method Blank	87	64	44	66	30	83

Surrogate Legend
 TBP = 2,4,6-Tribromophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 2FP = 2-Fluorophenol (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 PHL6 = Phenol-d6 (Surr)
 TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

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

Job ID: 380-107731-1
 SDG: Weekly

Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1 (38-134)
380-107731-1	Halawa Shaft Viewing Pool	69
380-107731-2	TRIP BLANK	72
380-108696-C-3 MS	Matrix Spike	85
380-108696-C-3 MSD	Matrix Spike Duplicate	88
570-195011-E-4 MS	Matrix Spike	83
570-195011-F-4 MSD	Matrix Spike Duplicate	86
LCS 570-472071/3	Lab Control Sample	83
LCS 570-472495/3	Lab Control Sample	84
LCSD 570-472071/4	Lab Control Sample Dup	83
LCSD 570-472495/4	Lab Control Sample Dup	81
MB 570-472071/6	Method Blank	80
MB 570-472495/6	Method Blank	77
MRL 570-472071/5	Lab Control Sample	74
MRL 570-472495/5	Lab Control Sample	74

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTCSN1 (60-130)
380-107533-C-1-A MS	Matrix Spike	117
380-107533-C-1-B MSD	Matrix Spike Duplicate	102
380-107731-1	Halawa Shaft Viewing Pool	117
LCS 570-469700/2-A	Lab Control Sample	118
LCSD 570-469700/3-A	Lab Control Sample Dup	114
MB 570-469700/1-A	Method Blank	113
MRL 570-469700/4-A	Lab Control Sample	99

Surrogate Legend

OTCSN = n-Octacosane (Surr)

QC Sample Results

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

Job ID: 380-107731-1
 SDG: Weekly

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

Lab Sample ID: MB 380-103028/21-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103028

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
2,4'-DDD	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
2,4'-DDE	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
2,4'-DDT	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
4,4'-DDD	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
4,4'-DDE	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
4,4'-DDT	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Acenaphthene	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Acenaphthylene	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Acetochlor	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Alachlor	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
alpha-BHC	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
alpha-Chlordane	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Anthracene	<0.020		0.020	ug/L		08/09/24 10:30	08/12/24 09:38	1
Atrazine	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Benz(a)anthracene	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Benzo[a]pyrene	<0.020		0.020	ug/L		08/09/24 10:30	08/12/24 09:38	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		08/09/24 10:30	08/12/24 09:38	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		08/09/24 10:30	08/12/24 09:38	1
beta-BHC	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		08/09/24 10:30	08/12/24 09:38	1
Aldrin	<0.0099		0.0099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Bromacil	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Butachlor	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Butylbenzylphthalate	<0.50		0.50	ug/L		08/09/24 10:30	08/12/24 09:38	1
Chlorobenzilate	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Chloroneb	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Chlorpyrifos	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Chrysene	<0.020		0.020	ug/L		08/09/24 10:30	08/12/24 09:38	1
delta-BHC	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		08/09/24 10:30	08/12/24 09:38	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Dieldrin	<0.0099		0.0099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Diethylphthalate	<0.50		0.50	ug/L		08/09/24 10:30	08/12/24 09:38	1
Dimethylphthalate	<0.50		0.50	ug/L		08/09/24 10:30	08/12/24 09:38	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		08/09/24 10:30	08/12/24 09:38	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Endosulfan sulfate	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Endrin	<0.0099		0.0099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Endrin aldehyde	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
EPTC	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Fluoranthene	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1

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QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: MB 380-103028/21-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103028

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
gamma-BHC (Lindane)	<0.0099		0.0099	ug/L		08/09/24 10:30	08/12/24 09:38	1
gamma-Chlordane	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Heptachlor	<0.0099		0.0099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Heptachlor epoxide (isomer B)	<0.0099		0.0099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Hexachlorobenzene	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Isophorone	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Malathion	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Methoxychlor	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Metolachlor	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Molinate	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Naphthalene	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Parathion	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Phenanthrene	<0.040		0.040	ug/L		08/09/24 10:30	08/12/24 09:38	1
Propachlor	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Pyrene	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Simazine	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Terbacil	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Terbutylazine	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Thiobencarb	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		08/09/24 10:30	08/12/24 09:38	1
trans-Nonachlor	<0.050		0.050	ug/L		08/09/24 10:30	08/12/24 09:38	1
Trifluralin	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
1-Methylnaphthalene	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1
2-Methylnaphthalene	<0.099		0.099	ug/L		08/09/24 10:30	08/12/24 09:38	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	0.976	T J	ug/L		2.40	N/A	08/09/24 10:30	08/12/24 09:38	1
Unknown	1.17	T J	ug/L		2.48	N/A	08/09/24 10:30	08/12/24 09:38	1
Unknown	0.655	T J	ug/L		2.76	N/A	08/09/24 10:30	08/12/24 09:38	1
Unknown	0.663	T J	ug/L		3.33	N/A	08/09/24 10:30	08/12/24 09:38	1
Unknown	1.44	T J	ug/L		11.22	N/A	08/09/24 10:30	08/12/24 09:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	101		70 - 130	08/09/24 10:30	08/12/24 09:38	1
Perylene-d12	97		70 - 130	08/09/24 10:30	08/12/24 09:38	1
Triphenylphosphate	109		70 - 130	08/09/24 10:30	08/12/24 09:38	1

Lab Sample ID: LCS 380-103028/23-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,4'-DDD	1.99	2.01		ug/L		101	70 - 130
2,4'-DDE	1.99	1.83		ug/L		92	70 - 130

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QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: LCS 380-103028/23-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDT	1.99	1.99		ug/L		100	70 - 130
2,4-Dinitrotoluene	1.99	2.00		ug/L		101	70 - 130
2,6-Dinitrotoluene	1.99	2.05		ug/L		103	70 - 130
4,4'-DDD	1.99	2.06		ug/L		103	70 - 130
4,4'-DDE	1.99	1.95		ug/L		98	70 - 130
4,4'-DDT	1.99	1.93		ug/L		97	70 - 130
Acenaphthene	1.99	1.96		ug/L		99	70 - 130
Acenaphthylene	1.99	1.96		ug/L		99	70 - 130
Acetochlor	1.99	2.15		ug/L		108	70 - 130
Alachlor	1.99	2.08		ug/L		105	70 - 130
alpha-BHC	1.99	2.05		ug/L		103	70 - 130
alpha-Chlordane	1.99	2.10		ug/L		106	70 - 130
Anthracene	1.99	1.51		ug/L		76	70 - 130
Atrazine	1.99	2.19		ug/L		110	70 - 130
Benz(a)anthracene	1.99	1.93		ug/L		97	70 - 130
Benzo[a]pyrene	1.99	1.98		ug/L		100	70 - 130
Benzo[b]fluoranthene	1.99	2.10		ug/L		106	70 - 130
Benzo[g,h,i]perylene	1.99	2.27		ug/L		114	70 - 130
Benzo[k]fluoranthene	1.99	2.02		ug/L		102	70 - 130
beta-BHC	1.99	2.09		ug/L		105	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	2.40		ug/L		121	70 - 130
Aldrin	1.99	1.59		ug/L		80	70 - 130
Bromacil	1.99	2.05		ug/L		103	70 - 130
Butachlor	1.99	2.16		ug/L		108	70 - 130
Butylbenzylphthalate	1.99	2.21		ug/L		111	70 - 130
Chlorobenzilate	1.99	2.11		ug/L		106	70 - 130
Chloroneb	1.99	1.99		ug/L		100	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	2.05		ug/L		103	70 - 130
Chlorpyrifos	1.99	2.02		ug/L		101	70 - 130
Chrysene	1.99	2.06		ug/L		103	70 - 130
delta-BHC	1.99	2.02		ug/L		101	70 - 130
Di(2-ethylhexyl)adipate	1.99	2.43		ug/L		122	70 - 130
Dibenz(a,h)anthracene	1.99	2.31		ug/L		116	70 - 130
Diclorvos (DDVP)	1.99	2.24		ug/L		113	70 - 130
Dieldrin	1.99	1.73		ug/L		87	70 - 130
Diethylphthalate	1.99	2.19		ug/L		110	70 - 130
Dimethylphthalate	1.99	2.08		ug/L		105	70 - 130
Di-n-butyl phthalate	3.98	4.29		ug/L		108	70 - 130
Di-n-octyl phthalate	1.99	2.33		ug/L		117	70 - 130
Endosulfan I (Alpha)	1.99	2.07		ug/L		104	70 - 130
Endosulfan II (Beta)	1.99	2.03		ug/L		102	70 - 130
Endosulfan sulfate	1.99	1.81		ug/L		91	70 - 130
Endrin	1.99	1.80		ug/L		90	70 - 130
Endrin aldehyde	1.99	1.88		ug/L		94	60 - 130
EPTC	1.99	2.13		ug/L		107	70 - 130
Fluoranthene	1.99	2.17		ug/L		109	70 - 130
Fluorene	1.99	2.04		ug/L		103	70 - 130
gamma-BHC (Lindane)	1.99	1.97		ug/L		99	70 - 130
gamma-Chlordane	1.99	2.11		ug/L		106	70 - 130

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QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: LCS 380-103028/23-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor	1.99	1.84		ug/L		93	70 - 130
Heptachlor epoxide (isomer B)	1.99	2.15		ug/L		108	70 - 130
Hexachlorobenzene	1.99	1.94		ug/L		97	70 - 130
Hexachlorocyclopentadiene	1.99	1.77		ug/L		89	70 - 130
Indeno[1,2,3-cd]pyrene	1.99	2.38		ug/L		119	70 - 130
Isophorone	1.99	2.07		ug/L		104	70 - 130
Malathion	1.99	2.20		ug/L		111	70 - 130
Methoxychlor	1.99	2.04		ug/L		103	70 - 130
Metolachlor	1.99	2.14		ug/L		108	70 - 130
Molinate	1.99	2.07		ug/L		104	70 - 130
Naphthalene	1.99	2.08		ug/L		105	70 - 130
Parathion	1.99	2.31		ug/L		116	70 - 130
Pendimethalin (Penoxaline)	1.99	1.99		ug/L		100	70 - 130
Phenanthrene	1.99	1.88		ug/L		95	70 - 130
Propachlor	1.99	2.11		ug/L		106	70 - 130
Pyrene	1.99	2.05		ug/L		103	70 - 130
Simazine	1.99	2.05		ug/L		103	70 - 130
Terbacil	1.99	2.16		ug/L		109	70 - 130
Terbutylazine	1.99	2.11		ug/L		106	70 - 130
Thiobencarb	1.99	1.96		ug/L		99	70 - 130
trans-Nonachlor	1.99	1.84		ug/L		92	70 - 130
Trifluralin	1.99	2.06		ug/L		104	70 - 130
1-Methylnaphthalene	1.99	2.19		ug/L		110	70 - 130
2-Methylnaphthalene	1.99	2.26		ug/L		113	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	102		70 - 130
Perylene-d12	101		70 - 130
Triphenylphosphate	110		70 - 130

Lab Sample ID: LCSD 380-103028/24-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.99	1.96		ug/L		98	70 - 130	3	20
2,4'-DDE	1.99	1.74		ug/L		88	70 - 130	5	20
2,4'-DDT	1.99	1.93		ug/L		97	70 - 130	3	20
2,4-Dinitrotoluene	1.99	2.03		ug/L		102	70 - 130	2	20
2,6-Dinitrotoluene	1.99	2.05		ug/L		103	70 - 130	0	20
4,4'-DDD	1.99	1.98		ug/L		100	70 - 130	4	20
4,4'-DDE	1.99	1.87		ug/L		94	70 - 130	4	20
4,4'-DDT	1.99	1.84		ug/L		92	70 - 130	5	20
Acenaphthene	1.99	1.95		ug/L		98	70 - 130	1	20
Acenaphthylene	1.99	2.01		ug/L		101	70 - 130	3	20
Acetochlor	1.99	2.29		ug/L		115	70 - 130	6	20
Alachlor	1.99	2.17		ug/L		109	70 - 130	4	20
alpha-BHC	1.99	2.05		ug/L		103	70 - 130	0	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: LCSD 380-103028/24-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
alpha-Chlordane	1.99	2.05		ug/L		103	70 - 130	3	20	
Anthracene	1.99	1.54		ug/L		78	70 - 130	2	20	
Atrazine	1.99	2.21		ug/L		111	70 - 130	1	20	
Benz(a)anthracene	1.99	1.84		ug/L		93	70 - 130	5	20	
Benzo[a]pyrene	1.99	2.07		ug/L		104	70 - 130	4	20	
Benzo[b]fluoranthene	1.99	2.18		ug/L		110	70 - 130	4	20	
Benzo[g,h,i]perylene	1.99	2.41		ug/L		121	70 - 130	6	20	
Benzo[k]fluoranthene	1.99	2.26		ug/L		114	70 - 130	11	20	
beta-BHC	1.99	2.13		ug/L		107	70 - 130	2	20	
Bis(2-ethylhexyl) phthalate	1.99	2.54		ug/L		128	70 - 130	6	20	
Aldrin	1.99	1.58		ug/L		79	70 - 130	1	20	
Bromacil	1.99	2.18		ug/L		110	70 - 130	6	20	
Butachlor	1.99	2.22		ug/L		112	70 - 130	3	20	
Butylbenzylphthalate	1.99	2.21		ug/L		111	70 - 130	0	20	
Chlorobenzilate	1.99	2.22		ug/L		112	70 - 130	5	20	
Chloroneb	1.99	2.01		ug/L		101	70 - 130	1	20	
Chlorothalonil (Draconil, Bravo)	1.99	2.10		ug/L		106	70 - 130	2	20	
Chlorpyrifos	1.99	2.04		ug/L		103	70 - 130	1	20	
Chrysene	1.99	2.22		ug/L		112	70 - 130	7	20	
delta-BHC	1.99	2.10		ug/L		106	70 - 130	4	20	
Di(2-ethylhexyl)adipate	1.99	2.28		ug/L		115	70 - 130	6	20	
Dibenz(a,h)anthracene	1.99	2.38		ug/L		120	70 - 130	3	20	
Diclorvos (DDVP)	1.99	2.27		ug/L		115	70 - 130	2	20	
Dieldrin	1.99	1.74		ug/L		88	70 - 130	1	20	
Diethylphthalate	1.99	2.22		ug/L		112	70 - 130	1	20	
Dimethylphthalate	1.99	2.09		ug/L		105	70 - 130	1	20	
Di-n-butyl phthalate	3.97	4.35		ug/L		109	70 - 130	1	20	
Di-n-octyl phthalate	1.99	2.40		ug/L		121	70 - 130	3	20	
Endosulfan I (Alpha)	1.99	2.13		ug/L		107	70 - 130	3	20	
Endosulfan II (Beta)	1.99	2.05		ug/L		103	70 - 130	1	20	
Endosulfan sulfate	1.99	1.87		ug/L		94	70 - 130	4	20	
Endrin	1.99	1.79		ug/L		90	70 - 130	0	20	
Endrin aldehyde	1.99	1.83		ug/L		92	60 - 130	3	20	
EPTC	1.99	2.17		ug/L		109	70 - 130	2	20	
Fluoranthene	1.99	2.14		ug/L		108	70 - 130	2	20	
Fluorene	1.99	2.02		ug/L		102	70 - 130	1	20	
gamma-BHC (Lindane)	1.99	1.99		ug/L		100	70 - 130	1	20	
gamma-Chlordane	1.99	2.07		ug/L		104	70 - 130	2	20	
Heptachlor	1.99	1.83		ug/L		92	70 - 130	1	20	
Heptachlor epoxide (isomer B)	1.99	2.22		ug/L		112	70 - 130	3	20	
Hexachlorobenzene	1.99	1.81		ug/L		91	70 - 130	7	20	
Hexachlorocyclopentadiene	1.99	1.71		ug/L		86	70 - 130	3	20	
Indeno[1,2,3-cd]pyrene	1.99	2.43		ug/L		123	70 - 130	2	20	
Isophorone	1.99	2.10		ug/L		106	70 - 130	1	20	
Malathion	1.99	2.31		ug/L		116	70 - 130	5	20	
Methoxychlor	1.99	2.25		ug/L		113	70 - 130	10	20	
Metolachlor	1.99	2.25		ug/L		113	70 - 130	5	20	
Molinate	1.99	2.14		ug/L		108	70 - 130	3	20	
Naphthalene	1.99	2.11		ug/L		106	70 - 130	1	20	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: LCSD 380-103028/24-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Parathion	1.99	2.38		ug/L		120	70 - 130	3	20	
Pendimethalin (Penoxaline)	1.99	1.88		ug/L		95	70 - 130	5	20	
Phenanthrene	1.99	1.92		ug/L		97	70 - 130	2	20	
Propachlor	1.99	2.15		ug/L		108	70 - 130	2	20	
Pyrene	1.99	2.03		ug/L		102	70 - 130	1	20	
Simazine	1.99	2.05		ug/L		103	70 - 130	0	20	
Terbacil	1.99	2.43		ug/L		122	70 - 130	12	20	
Terbutylazine	1.99	2.16		ug/L		109	70 - 130	2	20	
Thiobencarb	1.99	2.04		ug/L		103	70 - 130	4	20	
trans-Nonachlor	1.99	1.75		ug/L		88	70 - 130	5	20	
Trifluralin	1.99	1.97		ug/L		99	70 - 130	5	20	
1-Methylnaphthalene	1.99	2.18		ug/L		110	70 - 130	1	20	
2-Methylnaphthalene	1.99	2.23		ug/L		112	70 - 130	1	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	98		70 - 130
Triphenylphosphate	110		70 - 130

Lab Sample ID: MRL 380-103028/22-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
2,4'-DDD	0.0994	0.108		ug/L		109	50 - 150	
2,4'-DDE	0.0994	0.107		ug/L		108	50 - 150	
2,4'-DDT	0.0994	0.115		ug/L		116	50 - 150	
2,4-Dinitrotoluene	0.0994	0.0979	J	ug/L		99	50 - 150	
2,6-Dinitrotoluene	0.0994	0.0973	J	ug/L		98	50 - 150	
4,4'-DDD	0.0994	0.125		ug/L		126	50 - 150	
4,4'-DDE	0.0994	0.0892	J	ug/L		90	50 - 150	
4,4'-DDT	0.0994	0.119		ug/L		120	50 - 150	
Acenaphthene	0.0994	0.100		ug/L		101	50 - 150	
Acenaphthylene	0.0994	0.0892	J	ug/L		90	50 - 150	
Acetochlor	0.0994	0.115		ug/L		115	50 - 150	
Alachlor	0.0497	0.0535		ug/L		108	50 - 150	
alpha-BHC	0.0994	0.113		ug/L		113	50 - 150	
alpha-Chlordane	0.0248	0.0307	J	ug/L		123	50 - 150	
Anthracene	0.0199	<0.019		ug/L		69	50 - 150	
Atrazine	0.0497	0.0577		ug/L		116	50 - 150	
Benz(a)anthracene	0.0497	0.0607		ug/L		122	50 - 150	
Benzo[a]pyrene	0.0199	0.0157	J	ug/L		79	50 - 150	
Benzo[b]fluoranthene	0.0199	0.0211		ug/L		106	50 - 150	
Benzo[g,h,i]perylene	0.0497	0.0502		ug/L		101	50 - 150	
Benzo[k]fluoranthene	0.0199	0.0190	J	ug/L		96	50 - 150	
beta-BHC	0.0994	0.127		ug/L		127	50 - 150	
Bis(2-ethylhexyl) phthalate	0.596	0.647		ug/L		109	50 - 150	
Aldrin	0.00994	<0.0099		ug/L		99	50 - 150	

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: MRL 380-103028/22-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Bromacil	0.0994	0.122		ug/L		123	50 - 150
Butachlor	0.0497	0.0661		ug/L		133	50 - 150
Butylbenzylphthalate	0.497	0.597		ug/L		120	50 - 150
Chlorobenzilate	0.0994	0.101		ug/L		102	50 - 150
Chloroneb	0.0994	0.0974	J	ug/L		98	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0994	0.0910	J	ug/L		92	50 - 150
Chlorpyrifos	0.0497	0.0573		ug/L		115	50 - 150
Chrysene	0.0199	0.0234		ug/L		118	50 - 150
delta-BHC	0.0994	0.126		ug/L		127	50 - 150
Di(2-ethylhexyl)adipate	0.596	0.694		ug/L		116	50 - 150
Dibenz(a,h)anthracene	0.0497	0.0445	J	ug/L		90	50 - 150
Diclorvos (DDVP)	0.0497	0.0548		ug/L		110	50 - 150
Dieldrin	0.00994	0.0135		ug/L		136	50 - 150
Diethylphthalate	0.497	0.564		ug/L		113	50 - 150
Dimethylphthalate	0.497	0.527		ug/L		106	50 - 150
Di-n-butyl phthalate	0.497	0.586	J	ug/L		118	49 - 243
Di-n-octyl phthalate	0.0994	0.113		ug/L		114	50 - 150
Endosulfan I (Alpha)	0.0994	0.0991		ug/L		100	50 - 150
Endosulfan II (Beta)	0.0994	0.130		ug/L		131	50 - 150
Endosulfan sulfate	0.0994	0.106		ug/L		107	50 - 150
Endrin	0.00994	0.0140		ug/L		141	50 - 150
Endrin aldehyde	0.0994	0.125		ug/L		126	50 - 150
EPTC	0.0994	0.0828	J	ug/L		83	50 - 150
Fluoranthene	0.0994	0.109		ug/L		110	50 - 150
Fluorene	0.0497	0.0508		ug/L		102	50 - 150
gamma-BHC (Lindane)	0.00994	0.0141		ug/L		142	50 - 150
gamma-Chlordane	0.0248	0.0292	J	ug/L		117	50 - 150
Heptachlor	0.00994	0.0126		ug/L		127	50 - 150
Heptachlor epoxide (isomer B)	0.00994	0.0196	^3+	ug/L		198	50 - 150
Hexachlorobenzene	0.0497	<0.041		ug/L		78	50 - 150
Hexachlorocyclopentadiene	0.0497	0.0462	J	ug/L		93	50 - 150
Indeno[1,2,3-cd]pyrene	0.0497	0.0502		ug/L		101	50 - 150
Isophorone	0.0994	0.111		ug/L		112	50 - 150
Malathion	0.0994	0.103		ug/L		103	50 - 150
Methoxychlor	0.0497	0.0629		ug/L		127	50 - 150
Metolachlor	0.0497	0.0636		ug/L		128	50 - 150
Molinate	0.0994	0.0996		ug/L		100	50 - 150
Naphthalene	0.0994	0.104		ug/L		104	50 - 150
Parathion	0.0994	0.107		ug/L		107	50 - 150
Pendimethalin (Penoxaline)	0.0994	0.101		ug/L		102	50 - 150
Phenanthrene	0.0397	0.0415		ug/L		104	50 - 150
Propachlor	0.0497	0.0528		ug/L		106	50 - 150
Pyrene	0.0497	0.0537		ug/L		108	50 - 150
Simazine	0.0497	0.0579		ug/L		117	50 - 150
Terbacil	0.0994	0.131		ug/L		132	50 - 150
Terbutylazine	0.0994	0.123		ug/L		123	50 - 150
Thiobencarb	0.0994	0.128		ug/L		128	50 - 150
trans-Nonachlor	0.0248	0.0293	J	ug/L		118	50 - 150
Trifluralin	0.0994	0.104		ug/L		105	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: MRL 380-103028/22-A
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0994	0.113		ug/L		114	50 - 150
2-Methylnaphthalene	0.0994	0.105		ug/L		106	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	95		70 - 130
Perylene-d12	97		70 - 130
Triphenylphosphate	109		70 - 130

Lab Sample ID: 380-107659-N-1-A MS
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	<0.097		1.94	2.02		ug/L		104	70 - 130
2,4'-DDE	<0.097		1.94	1.82		ug/L		94	70 - 130
2,4'-DDT	<0.097		1.94	1.98		ug/L		102	70 - 130
2,4-Dinitrotoluene	<0.097		1.94	1.97		ug/L		102	70 - 130
2,6-Dinitrotoluene	<0.097		1.94	2.03		ug/L		105	70 - 130
4,4'-DDD	<0.097		1.94	2.06		ug/L		106	70 - 130
4,4'-DDE	<0.097		1.94	1.93		ug/L		100	70 - 130
4,4'-DDT	<0.097		1.94	1.87		ug/L		96	70 - 130
Acenaphthene	<0.097		1.94	1.93		ug/L		100	70 - 130
Acenaphthylene	<0.097		1.94	1.83		ug/L		94	70 - 130
Acetochlor	<0.097		1.94	2.23		ug/L		115	70 - 130
Alachlor	<0.048		1.94	2.13		ug/L		110	70 - 130
alpha-BHC	<0.097		1.94	2.06		ug/L		106	70 - 130
alpha-Chlordane	<0.048		1.94	2.10		ug/L		108	70 - 130
Anthracene	<0.019	F1	1.94	0.0733	F1	ug/L		4	70 - 130
Atrazine	<0.048		1.94	2.18		ug/L		112	70 - 130
Benz(a)anthracene	<0.048	F1	1.94	1.13	F1	ug/L		58	70 - 130
Benzo[a]pyrene	<0.019	F1	1.94	0.470	F1	ug/L		24	70 - 130
Benzo[b]fluoranthene	<0.019		1.94	2.01		ug/L		104	70 - 130
Benzo[g,h,i]perylene	<0.048		1.94	2.15		ug/L		111	70 - 130
Benzo[k]fluoranthene	<0.019		1.94	1.87		ug/L		97	70 - 130
beta-BHC	<0.097		1.94	2.07		ug/L		107	70 - 130
Bis(2-ethylhexyl) phthalate	<0.58		1.94	2.00		ug/L		103	70 - 130
Aldrin	<0.0097		1.94	1.71		ug/L		88	70 - 130
Bromacil	<0.097		1.94	2.10		ug/L		104	70 - 130
Butachlor	<0.048		1.94	2.19		ug/L		113	70 - 130
Butylbenzylphthalate	<0.48		1.94	2.23		ug/L		115	70 - 130
Chlorobenzilate	<0.097		1.94	2.30		ug/L		119	70 - 130
Chloroneb	<0.097		1.94	2.16		ug/L		112	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.097		1.94	2.06		ug/L		107	70 - 130
Chlorpyrifos	<0.048		1.94	2.04		ug/L		105	70 - 130
Chrysene	<0.019		1.94	1.98		ug/L		102	70 - 130
delta-BHC	<0.097		1.94	2.04		ug/L		105	70 - 130
Di(2-ethylhexyl)adipate	<0.58		1.94	2.21		ug/L		114	70 - 130
Dibenz(a,h)anthracene	<0.048		1.94	2.22		ug/L		115	70 - 130

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: 380-107659-N-1-A MS
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Diclorvos (DDVP)	<0.048		1.94	2.18		ug/L		113	70 - 130
Dieldrin	<0.0097		1.94	1.79		ug/L		92	70 - 130
Diethylphthalate	<0.48		1.94	2.19		ug/L		113	70 - 130
Dimethylphthalate	<0.48		1.94	2.09		ug/L		108	70 - 130
Di-n-butyl phthalate	<0.97		3.88	4.40		ug/L		114	70 - 130
Di-n-octyl phthalate	<0.097		1.94	1.82		ug/L		94	70 - 130
Endosulfan I (Alpha)	<0.097		1.94	2.13		ug/L		110	70 - 130
Endosulfan II (Beta)	<0.097		1.94	2.09		ug/L		108	70 - 130
Endosulfan sulfate	<0.097		1.94	1.76		ug/L		91	70 - 130
Endrin	<0.0097		1.94	1.78		ug/L		92	70 - 130
Endrin aldehyde	<0.097		1.94	1.68		ug/L		87	60 - 130
EPTC	<0.097		1.94	2.12		ug/L		109	70 - 130
Fluoranthene	<0.097		1.94	2.16		ug/L		111	70 - 130
Fluorene	<0.048		1.94	2.01		ug/L		104	70 - 130
gamma-BHC (Lindane)	<0.0097		1.94	1.95		ug/L		101	70 - 130
gamma-Chlordane	<0.048		1.94	2.12		ug/L		109	70 - 130
Heptachlor	<0.0097		1.94	1.91		ug/L		99	70 - 130
Heptachlor epoxide (isomer B)	<0.0097	^3+	1.94	2.22		ug/L		114	70 - 130
Hexachlorobenzene	<0.048		1.94	1.95		ug/L		101	70 - 130
Hexachlorocyclopentadiene	<0.048		1.94	1.91		ug/L		99	70 - 130
Indeno[1,2,3-cd]pyrene	<0.048		1.94	2.21		ug/L		114	70 - 130
Isophorone	<0.097		1.94	2.06		ug/L		106	70 - 130
Malathion	<0.097		1.94	2.26		ug/L		117	70 - 130
Methoxychlor	<0.048		1.94	1.98		ug/L		102	70 - 130
Metolachlor	<0.048		1.94	2.19		ug/L		113	70 - 130
Molinate	<0.097		1.94	2.11		ug/L		109	70 - 130
Naphthalene	<0.097		1.94	2.08		ug/L		107	70 - 130
Parathion	<0.097		1.94	2.36		ug/L		122	70 - 130
Pendimethalin (Penoxaline)	<0.097		1.94	2.04		ug/L		105	70 - 130
Phenanthrene	<0.039		1.94	1.90		ug/L		98	70 - 130
Propachlor	<0.048		1.94	2.13		ug/L		110	70 - 130
Pyrene	<0.048		1.94	1.92		ug/L		99	70 - 130
Simazine	<0.048		1.94	2.04		ug/L		105	70 - 130
Terbacil	<0.097		1.94	2.22		ug/L		114	70 - 130
Terbutylazine	<0.097		1.94	2.11		ug/L		109	70 - 130
Thiobencarb	<0.097		1.94	1.98		ug/L		102	70 - 130
trans-Nonachlor	<0.048		1.94	1.83		ug/L		94	70 - 130
Trifluralin	<0.097		1.94	2.11		ug/L		109	70 - 130
1-Methylnaphthalene	<0.097		1.94	2.18		ug/L		113	70 - 130
2-Methylnaphthalene	<0.097		1.94	2.21		ug/L		114	70 - 130

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	103		70 - 130
Perylene-d12	96		70 - 130
Triphenylphosphate	112		70 - 130

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: 380-107731-1 DU
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Halawa Shaft Viewing Pool
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
2,4'-DDD	<0.099		<0.10		ug/L		NC	20
2,4'-DDE	<0.099		<0.10		ug/L		NC	20
2,4'-DDT	<0.099		<0.10		ug/L		NC	20
2,4-Dinitrotoluene	<0.099		<0.10		ug/L		NC	20
2,6-Dinitrotoluene	<0.099		<0.10		ug/L		NC	20
4,4'-DDD	<0.099		<0.10		ug/L		NC	20
4,4'-DDE	<0.099		<0.10		ug/L		NC	20
4,4'-DDT	<0.099		<0.10		ug/L		NC	20
Acenaphthene	<0.099		<0.10		ug/L		NC	20
Acenaphthylene	<0.099		<0.10		ug/L		NC	20
Acetochlor	<0.099		<0.10		ug/L		NC	20
Alachlor	<0.049		<0.050		ug/L		NC	20
alpha-BHC	<0.099		<0.10		ug/L		NC	20
alpha-Chlordane	<0.049		<0.050		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.049		<0.050		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.050		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.050		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.099		<0.10		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.60		ug/L		NC	20
Aldrin	<0.0099		<0.010		ug/L		NC	20
Bromacil	<0.099		<0.10		ug/L		NC	20
Butachlor	<0.049		<0.050		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.50		ug/L		NC	20
Chlorobenzilate	<0.099		<0.10		ug/L		NC	20
Chloroneb	<0.099		<0.10		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.099		<0.10		ug/L		NC	20
Chlorpyrifos	<0.049		<0.050		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.099		<0.10		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.60		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.050		ug/L		NC	20
Diclorvos (DDVP)	<0.049		<0.050		ug/L		NC	20
Dieldrin	<0.0099		<0.010		ug/L		NC	20
Diethylphthalate	<0.49		<0.50		ug/L		NC	20
Dimethylphthalate	<0.49		<0.50		ug/L		NC	20
Di-n-butyl phthalate	<0.99		<1.0		ug/L		NC	20
Di-n-octyl phthalate	<0.099		<0.10		ug/L		NC	20
Endosulfan I (Alpha)	<0.099		<0.10		ug/L		NC	20
Endosulfan II (Beta)	<0.099		<0.10		ug/L		NC	20
Endosulfan sulfate	<0.099		<0.10		ug/L		NC	20
Endrin	<0.0099		<0.010		ug/L		NC	20
Endrin aldehyde	<0.099		<0.10		ug/L		NC	20
EPTC	<0.099		<0.10		ug/L		NC	20
Fluoranthene	<0.099		<0.10		ug/L		NC	20

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

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

Lab Sample ID: 380-107731-1 DU
Matrix: Water
Analysis Batch: 103278

Client Sample ID: Halawa Shaft Viewing Pool
Prep Type: Total/NA
Prep Batch: 103028

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Fluorene	<0.049		<0.050		ug/L		NC	20
gamma-BHC (Lindane)	<0.0099		<0.010		ug/L		NC	20
gamma-Chlordane	<0.049		<0.050		ug/L		NC	20
Heptachlor	<0.0099		<0.010		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.0099	^3+	<0.010		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.050		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.050		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.050		ug/L		NC	20
Isophorone	<0.099		<0.10		ug/L		NC	20
Malathion	<0.099		<0.10		ug/L		NC	20
Methoxychlor	<0.049		<0.050		ug/L		NC	20
Metolachlor	<0.049		<0.050		ug/L		NC	20
Molinate	<0.099		<0.10		ug/L		NC	20
Naphthalene	<0.099		<0.10		ug/L		NC	20
Parathion	<0.099		<0.10		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.099		<0.10		ug/L		NC	20
Phenanthrene	<0.040		<0.040		ug/L		NC	20
Propachlor	<0.049		<0.050		ug/L		NC	20
Pyrene	<0.049		<0.050		ug/L		NC	20
Simazine	<0.049		<0.050		ug/L		NC	20
Terbacil	<0.099		<0.10		ug/L		NC	20
Terbutylazine	<0.099		<0.10		ug/L		NC	20
Thiobencarb	<0.099		<0.10		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.050		ug/L		NC	20
Trifluralin	<0.099		<0.10		ug/L		NC	20
1-Methylnaphthalene	<0.099		<0.10		ug/L		NC	20
2-Methylnaphthalene	<0.099		<0.10		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	101		70 - 130
Perylene-d12	89		70 - 130
Triphenylphosphate	107		70 - 130

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-469775/1-A
Matrix: Water
Analysis Batch: 472479

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469775

Tentatively Identified Compound	MB	MB	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
	Est. Result	Qualifier							
Tentatively Identified Compound	None		ug/L			N/A	08/12/24 08:05	08/20/24 12:21	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol (Surr)	80		33 - 139	08/12/24 08:05	08/20/24 12:21	1
2-Fluorobiphenyl (Surr)	66		33 - 126	08/12/24 08:05	08/20/24 12:21	1
2-Fluorophenol (Surr)	43		12 - 120	08/12/24 08:05	08/20/24 12:21	1
Nitrobenzene-d5 (Surr)	63		36 - 120	08/12/24 08:05	08/20/24 12:21	1

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QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-469775/1-A
Matrix: Water
Analysis Batch: 472479

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469775

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Phenol-d6 (Surr)	24		10 - 120	08/12/24 08:05	08/20/24 12:21	1
p-Terphenyl-d14 (Surr)	74		47 - 131	08/12/24 08:05	08/20/24 12:21	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-469775/1-A
Matrix: Water
Analysis Batch: 471031

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469775

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
2-Methylnaphthalene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Acenaphthene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Acenaphthylene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Anthracene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Benzo[a]anthracene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Benzo[a]pyrene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Benzo[b]fluoranthene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Benzo[g,h,i]perylene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Benzo[k]fluoranthene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Chrysene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Dibenz(a,h)anthracene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Fluoranthene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Fluorene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Indeno[1,2,3-cd]pyrene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Naphthalene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Phenanthrene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1
Pyrene	<0.20		0.20	ug/L		08/12/24 08:05	08/15/24 15:04	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol (Surr)	87		28 - 127	08/12/24 08:05	08/15/24 15:04	1
2-Fluorobiphenyl (Surr)	64		31 - 120	08/12/24 08:05	08/15/24 15:04	1
2-Fluorophenol (Surr)	44		17 - 120	08/12/24 08:05	08/15/24 15:04	1
Nitrobenzene-d5 (Surr)	66		27 - 120	08/12/24 08:05	08/15/24 15:04	1
Phenol-d6 (Surr)	30		10 - 120	08/12/24 08:05	08/15/24 15:04	1
p-Terphenyl-d14 (Surr)	83		45 - 120	08/12/24 08:05	08/15/24 15:04	1

Lab Sample ID: LCS 570-469775/2-A
Matrix: Water
Analysis Batch: 471031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469775

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Methylnaphthalene	20.0	13.3		ug/L		67	43 - 120
Acenaphthene	20.0	16.1		ug/L		80	60 - 132
Acenaphthylene	20.0	16.8		ug/L		84	54 - 126
Anthracene	20.0	17.6		ug/L		88	43 - 120
Benzo[a]anthracene	20.0	16.8		ug/L		84	42 - 133

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QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-469775/2-A
Matrix: Water
Analysis Batch: 471031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469775

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[a]pyrene	20.0	16.1		ug/L		80	32 - 148
Benzo[b]fluoranthene	20.0	16.4		ug/L		82	42 - 140
Benzo[g,h,i]perylene	20.0	17.3		ug/L		86	1 - 195
Benzo[k]fluoranthene	20.0	17.5		ug/L		88	25 - 146
Chrysene	20.0	17.0		ug/L		85	44 - 140
Dibenz(a,h)anthracene	20.0	17.4		ug/L		87	1 - 200
Fluoranthene	20.0	17.4		ug/L		87	43 - 121
Fluorene	20.0	17.2		ug/L		86	70 - 120
Indeno[1,2,3-cd]pyrene	20.0	16.8		ug/L		84	1 - 151
Naphthalene	20.0	12.9		ug/L		64	36 - 120
Phenanthrene	20.0	16.8		ug/L		84	65 - 120
Pyrene	20.0	18.3		ug/L		92	70 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	84		28 - 127
2-Fluorobiphenyl (Surr)	70		31 - 120
2-Fluorophenol (Surr)	49		17 - 120
Nitrobenzene-d5 (Surr)	58		27 - 120
Phenol-d6 (Surr)	36		10 - 120
p-Terphenyl-d14 (Surr)	82		45 - 120

Lab Sample ID: LCSD 570-469775/3-A
Matrix: Water
Analysis Batch: 471031

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 469775

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	20.0	12.8		ug/L		64	47 - 120	6	20
2-Methylnaphthalene	20.0	12.4		ug/L		62	43 - 120	7	20
Acenaphthene	20.0	15.3		ug/L		77	60 - 132	5	29
Acenaphthylene	20.0	16.1		ug/L		81	54 - 126	4	45
Anthracene	20.0	17.6		ug/L		88	43 - 120	0	40
Benzo[a]anthracene	20.0	16.9		ug/L		84	42 - 133	0	32
Benzo[a]pyrene	20.0	15.9		ug/L		80	32 - 148	1	43
Benzo[b]fluoranthene	20.0	16.4		ug/L		82	42 - 140	0	43
Benzo[g,h,i]perylene	20.0	17.1		ug/L		86	1 - 195	1	61
Benzo[k]fluoranthene	20.0	17.5		ug/L		88	25 - 146	0	38
Chrysene	20.0	17.0		ug/L		85	44 - 140	0	53
Dibenz(a,h)anthracene	20.0	17.1		ug/L		86	1 - 200	2	75
Fluoranthene	20.0	17.4		ug/L		87	43 - 121	0	40
Fluorene	20.0	16.6		ug/L		83	70 - 120	4	23
Indeno[1,2,3-cd]pyrene	20.0	16.6		ug/L		83	1 - 151	1	60
Naphthalene	20.0	11.6		ug/L		58	36 - 120	10	39
Phenanthrene	20.0	16.8		ug/L		84	65 - 120	0	24
Pyrene	20.0	18.6		ug/L		93	70 - 120	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	83		28 - 127
2-Fluorobiphenyl (Surr)	65		31 - 120

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-469775/3-A
Matrix: Water
Analysis Batch: 471031

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 469775

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2-Fluorophenol (Surr)	43		17 - 120
Nitrobenzene-d5 (Surr)	52		27 - 120
Phenol-d6 (Surr)	32		10 - 120
p-Terphenyl-d14 (Surr)	83		45 - 120

Lab Sample ID: 380-107533-A-1-A MS
Matrix: Water
Analysis Batch: 471031

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 469775

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
1-Methylnaphthalene	<0.19		19.5	11.3		ug/L		58		36 - 120
2-Methylnaphthalene	<0.19		19.5	11.1		ug/L		57		32 - 124
Acenaphthene	<0.19		19.5	14.2		ug/L		73		47 - 145
Acenaphthylene	<0.19		19.5	15.0		ug/L		77		33 - 145
Anthracene	<0.19		19.5	16.2		ug/L		83		27 - 133
Benzo[a]anthracene	<0.19		19.5	15.5		ug/L		80		33 - 143
Benzo[a]pyrene	<0.19		19.5	15.3		ug/L		78		17 - 163
Benzo[b]fluoranthene	<0.19		19.5	15.5		ug/L		79		24 - 159
Benzo[g,h,i]perylene	<0.19		19.5	15.8		ug/L		81		1 - 219
Benzo[k]fluoranthene	<0.19		19.5	16.1		ug/L		83		11 - 162
Chrysene	<0.19		19.5	15.6		ug/L		80		17 - 168
Dibenz(a,h)anthracene	<0.19		19.5	15.9		ug/L		82		1 - 227
Fluoranthene	<0.19		19.5	16.9		ug/L		87		26 - 137
Fluorene	<0.19		19.5	15.6		ug/L		80		59 - 121
Indeno[1,2,3-cd]pyrene	<0.19		19.5	15.3		ug/L		79		1 - 171
Naphthalene	<0.19		19.5	10.6		ug/L		54		21 - 133
Phenanthrene	<0.19		19.5	15.7		ug/L		81		54 - 120
Pyrene	<0.19		19.5	16.5		ug/L		85		52 - 120

Surrogate	MS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	80		28 - 127
2-Fluorobiphenyl (Surr)	64		31 - 120
2-Fluorophenol (Surr)	38		17 - 120
Nitrobenzene-d5 (Surr)	51		27 - 120
Phenol-d6 (Surr)	27		10 - 120
p-Terphenyl-d14 (Surr)	78		45 - 120

Lab Sample ID: 380-107533-A-1-B MSD
Matrix: Water
Analysis Batch: 471031

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 469775

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier								
1-Methylnaphthalene	<0.19		19.5	11.4		ug/L		58		36 - 120	0		30
2-Methylnaphthalene	<0.19		19.5	11.1		ug/L		57		32 - 124	0		30
Acenaphthene	<0.19		19.5	14.5		ug/L		75		47 - 145	2		48
Acenaphthylene	<0.19		19.5	15.2		ug/L		78		33 - 145	1		74
Anthracene	<0.19		19.5	16.2		ug/L		83		27 - 133	0		66
Benzo[a]anthracene	<0.19		19.5	15.8		ug/L		81		33 - 143	2		53

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: 380-107533-A-1-B MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 471031

Prep Batch: 469775

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
Benzo[a]pyrene	<0.19		19.5	15.4		ug/L		79	17 - 163	1	72	
Benzo[b]fluoranthene	<0.19		19.5	15.4		ug/L		79	24 - 159	0	71	
Benzo[g,h,i]perylene	<0.19		19.5	16.3		ug/L		84	1 - 219	3	97	
Benzo[k]fluoranthene	<0.19		19.5	16.4		ug/L		84	11 - 162	2	63	
Chrysene	<0.19		19.5	15.9		ug/L		82	17 - 168	2	87	
Dibenz(a,h)anthracene	<0.19		19.5	16.4		ug/L		84	1 - 227	3	126	
Fluoranthene	<0.19		19.5	16.2		ug/L		83	26 - 137	4	66	
Fluorene	<0.19		19.5	15.6		ug/L		80	59 - 121	0	38	
Indeno[1,2,3-cd]pyrene	<0.19		19.5	15.6		ug/L		80	1 - 171	2	99	
Naphthalene	<0.19		19.5	10.3		ug/L		53	21 - 133	3	65	
Phenanthrene	<0.19		19.5	15.8		ug/L		81	54 - 120	1	39	
Pyrene	<0.19		19.5	17.3		ug/L		89	52 - 120	5	49	

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	80		28 - 127
2-Fluorobiphenyl (Surr)	64		31 - 120
2-Fluorophenol (Surr)	37		17 - 120
Nitrobenzene-d5 (Surr)	49		27 - 120
Phenol-d6 (Surr)	26		10 - 120
p-Terphenyl-d14 (Surr)	82		45 - 120

Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-472071/6

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 472071

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
GRO (C6-C10)	<10		10	ug/L			08/19/24 12:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		38 - 134		08/19/24 12:15	1

Lab Sample ID: LCS 570-472071/3

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 472071

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Gasoline Range Organics (C4-C13)	400	323		ug/L		81	78 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		38 - 134

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Method: 8015B GRO LL - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCSD 570-472071/4
Matrix: Water
Analysis Batch: 472071

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	400	328		ug/L		82	78 - 120	2	10
Surrogate		%Recovery	LCSD Qualifier						
4-Bromofluorobenzene (Surr)		83							38 - 134

Lab Sample ID: MRL 570-472071/5
Matrix: Water
Analysis Batch: 472071

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)	10.0	8.08	J	ug/L		81	50 - 150		
Surrogate		%Recovery	MRL Qualifier						
4-Bromofluorobenzene (Surr)		74							38 - 134

Lab Sample ID: 380-108696-C-3 MS
Matrix: Water
Analysis Batch: 472071

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)	<10		400	313		ug/L		78	68 - 122		
Surrogate				%Recovery	MS Qualifier						
4-Bromofluorobenzene (Surr)				85							38 - 134

Lab Sample ID: 380-108696-C-3 MSD
Matrix: Water
Analysis Batch: 472071

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	<10		400	328		ug/L		82	68 - 122	5	18
Surrogate				%Recovery	MSD Qualifier						
4-Bromofluorobenzene (Surr)				88							38 - 134

Lab Sample ID: MB 570-472495/6
Matrix: Water
Analysis Batch: 472495

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			08/20/24 12:15	1
Surrogate			Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			38 - 134				08/20/24 12:15	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Lab Sample ID: LCS 570-472495/3
Matrix: Water
Analysis Batch: 472495

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	400	328		ug/L		82	78 - 120
Surrogate		LCS %Recovery	LCS Qualifier				Limits
4-Bromofluorobenzene (Surr)		84					38 - 134

Lab Sample ID: LCSD 570-472495/4
Matrix: Water
Analysis Batch: 472495

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	400	333		ug/L		83	78 - 120	2	10
Surrogate		LCSD %Recovery	LCSD Qualifier				Limits		
4-Bromofluorobenzene (Surr)		81					38 - 134		

Lab Sample ID: MRL 570-472495/5
Matrix: Water
Analysis Batch: 472495

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	10.0	8.73	J	ug/L		87	50 - 150
Surrogate		MRL %Recovery	MRL Qualifier				Limits
4-Bromofluorobenzene (Surr)		74					38 - 134

Lab Sample ID: 570-195011-E-4 MS
Matrix: Water
Analysis Batch: 472495

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	<10		400	317		ug/L		79	68 - 122
Surrogate		MS %Recovery		MS Qualifier					Limits
4-Bromofluorobenzene (Surr)		83							38 - 134

Lab Sample ID: 570-195011-F-4 MSD
Matrix: Water
Analysis Batch: 472495

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	<10		400	322		ug/L		80	68 - 122	2	18

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Method: 8015B GRO LL - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: 570-195011-F-4 MSD
Matrix: Water
Analysis Batch: 472495

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	86		38 - 134

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Lab Sample ID: MB 570-469700/1-A
Matrix: Water
Analysis Batch: 471795

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469700

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		08/11/24 22:13	08/17/24 13:03	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		08/11/24 22:13	08/17/24 13:03	1
C8-C18	<25		25	ug/L		08/11/24 22:13	08/17/24 13:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	113		60 - 130	08/11/24 22:13	08/17/24 13:03	1

Lab Sample ID: LCS 570-469700/2-A
Matrix: Water
Analysis Batch: 471795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469700

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28	1600	1460		ug/L		91	56 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
n-Octacosane (Surr)	118		60 - 130

Lab Sample ID: LCSD 570-469700/3-A
Matrix: Water
Analysis Batch: 471795

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 469700

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
C10-C28	1600	1390		ug/L		87	56 - 127	5	23

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
n-Octacosane (Surr)	114		60 - 130

Lab Sample ID: MRL 570-469700/4-A
Matrix: Water
Analysis Batch: 471795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469700

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28	0.0200	0.0397	^3+	mg/L		198	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
n-Octacosane (Surr)	99		60 - 130

QC Sample Results

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

Job ID: 380-107731-1
SDG: Weekly

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level (Continued)

Lab Sample ID: 380-107533-C-1-A MS
Matrix: Water
Analysis Batch: 471795

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 469700

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28	<26	^3+	1690	1430		ug/L		85	70 - 130
Surrogate									
<i>n-Octacosane (Surr)</i>	<i>MS</i> 117	<i>MS</i> Qualifier	<i>Limits</i> 60 - 130						

Lab Sample ID: 380-107533-C-1-B MSD
Matrix: Water
Analysis Batch: 471795

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 469700

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	<26	^3+	1690	1400		ug/L		83	70 - 130	2	20
Surrogate											
<i>n-Octacosane (Surr)</i>	<i>MSD</i> 102	<i>MSD</i> Qualifier	<i>Limits</i> 60 - 130								

QC Association Summary

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

Job ID: 380-107731-1
SDG: Weekly

GC/MS Semi VOA

Prep Batch: 103028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-107731-1	Halawa Shaft Viewing Pool	Total/NA	Water	525.2	
MB 380-103028/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-103028/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-103028/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-103028/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-107659-N-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-107731-1 DU	Halawa Shaft Viewing Pool	Total/NA	Water	525.2	

Analysis Batch: 103278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-107731-1	Halawa Shaft Viewing Pool	Total/NA	Water	525.2	103028
MB 380-103028/21-A	Method Blank	Total/NA	Water	525.2	103028
LCS 380-103028/23-A	Lab Control Sample	Total/NA	Water	525.2	103028
LCSD 380-103028/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	103028
MRL 380-103028/22-A	Lab Control Sample	Total/NA	Water	525.2	103028
380-107659-N-1-A MS	Matrix Spike	Total/NA	Water	525.2	103028
380-107731-1 DU	Halawa Shaft Viewing Pool	Total/NA	Water	525.2	103028

Prep Batch: 469775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-107731-1	Halawa Shaft Viewing Pool	Total/NA	Water	625.1	
MB 570-469775/1-A	Method Blank	Total/NA	Water	625.1	
LCS 570-469775/2-A	Lab Control Sample	Total/NA	Water	625.1	
LCSD 570-469775/3-A	Lab Control Sample Dup	Total/NA	Water	625.1	
380-107533-A-1-A MS	Matrix Spike	Total/NA	Water	625.1	
380-107533-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625.1	

Analysis Batch: 471031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-107731-1	Halawa Shaft Viewing Pool	Total/NA	Water	625.1 SIM	469775
MB 570-469775/1-A	Method Blank	Total/NA	Water	625.1 SIM	469775
LCS 570-469775/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	469775
LCSD 570-469775/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	469775
380-107533-A-1-A MS	Matrix Spike	Total/NA	Water	625.1 SIM	469775
380-107533-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625.1 SIM	469775

Analysis Batch: 472479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-107731-1	Halawa Shaft Viewing Pool	Total/NA	Water	625.1	469775
MB 570-469775/1-A	Method Blank	Total/NA	Water	625.1	469775

GC VOA

Analysis Batch: 472071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-107731-2	TRIP BLANK	Total/NA	Water	8015B GRO LL	
MB 570-472071/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-472071/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-472071/4	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-472071/5	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-108696-C-3 MS	Matrix Spike	Total/NA	Water	8015B GRO LL	

QC Association Summary

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

Job ID: 380-107731-1
SDG: Weekly

GC VOA (Continued)

Analysis Batch: 472071 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-108696-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B GRO LL	

Analysis Batch: 472495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-107731-1	Halawa Shaft Viewing Pool	Total/NA	Water	8015B GRO LL	
MB 570-472495/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-472495/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-472495/4	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-472495/5	Lab Control Sample	Total/NA	Water	8015B GRO LL	
570-195011-E-4 MS	Matrix Spike	Total/NA	Water	8015B GRO LL	
570-195011-F-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B GRO LL	

GC Semi VOA

Prep Batch: 469700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-107731-1	Halawa Shaft Viewing Pool	Total/NA	Water	3510C	
MB 570-469700/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-469700/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-469700/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MRL 570-469700/4-A	Lab Control Sample	Total/NA	Water	3510C	
380-107533-C-1-A MS	Matrix Spike	Total/NA	Water	3510C	
380-107533-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	

Analysis Batch: 471795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-107731-1	Halawa Shaft Viewing Pool	Total/NA	Water	8015B	469700
MB 570-469700/1-A	Method Blank	Total/NA	Water	8015B	469700
LCS 570-469700/2-A	Lab Control Sample	Total/NA	Water	8015B	469700
LCSD 570-469700/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	469700
MRL 570-469700/4-A	Lab Control Sample	Total/NA	Water	8015B	469700
380-107533-C-1-A MS	Matrix Spike	Total/NA	Water	8015B	469700
380-107533-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	469700

Lab Chronicle

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

Job ID: 380-107731-1
 SDG: Weekly

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-107731-1

Date Collected: 08/06/24 09:30

Matrix: Water

Date Received: 08/08/24 09:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			103028	OTM3	EA POM	08/09/24 12:00
Total/NA	Analysis	525.2		1	103278	Q8LA	EA POM	08/12/24 10:18
Total/NA	Prep	625.1			469775	OAJ3	EET CAL 4	08/12/24 08:05
Total/NA	Analysis	625.1		1	472479	CG	EET CAL 4	08/20/24 15:54
Total/NA	Prep	625.1			469775	OAJ3	EET CAL 4	08/12/24 08:05
Total/NA	Analysis	625.1 SIM		1	471031	PQS1	EET CAL 4	08/15/24 19:32
Total/NA	Analysis	8015B GRO LL		1	472495	GC3Z	EET CAL 4	08/20/24 13:36
Total/NA	Prep	3510C			469700	H6FE	EET CAL 4	08/11/24 22:13
Total/NA	Analysis	8015B		1	471795	SP9M	EET CAL 4	08/17/24 16:13

Client Sample ID: TRIP BLANK

Lab Sample ID: 380-107731-2

Date Collected: 08/06/24 09:30

Matrix: Water

Date Received: 08/08/24 09:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	472071	GC3Z	EET CAL 4	08/19/24 15:21

Laboratory References:

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

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

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

Job ID: 380-107731-1
SDG: Weekly

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-25
<p>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.</p>			
Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Water	1-Methylnaphthalene
525.2	525.2	Water	2,4'-DDD
525.2	525.2	Water	2,4'-DDE
525.2	525.2	Water	2,4'-DDT
525.2	525.2	Water	2,4-Dinitrotoluene
525.2	525.2	Water	2,6-Dinitrotoluene
525.2	525.2	Water	2-Methylnaphthalene
525.2	525.2	Water	4,4'-DDD
525.2	525.2	Water	4,4'-DDE
525.2	525.2	Water	4,4' DDT
525.2	525.2	Water	Acetochlor
525.2	525.2	Water	alpha-BHC
525.2	525.2	Water	alpha-Chlordane
525.2	525.2	Water	beta-BHC
525.2	525.2	Water	Chlorobenzilate
525.2	525.2	Water	Chloroneb
525.2	525.2	Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Water	Chlorpyrifos
525.2	525.2	Water	delta-BHC
525.2	525.2	Water	Diclorvos (DDVP)
525.2	525.2	Water	Endosulfan I (Alpha)
525.2	525.2	Water	Endosulfan II (Beta)
525.2	525.2	Water	Endosulfan sulfate
525.2	525.2	Water	Endrin aldehyde
525.2	525.2	Water	EPTC
525.2	525.2	Water	gamma-Chlordane
525.2	525.2	Water	Isophorone
525.2	525.2	Water	Malathion
525.2	525.2	Water	Parathion
525.2	525.2	Water	Pendimethalin (Penoxaline)
525.2	525.2	Water	Terbacil
525.2	525.2	Water	Terbutylazine
525.2	525.2	Water	Total Permethrin (mixed isomers)
525.2	525.2	Water	trans-Nonachlor

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-24
Arkansas DEQ	State	88-0161	07-02-25
California	Los Angeles County Sanitation Districts	9257304	08-01-24 *
California	State	3082	08-20-24
Kansas	NELAP	E-10420	07-31-25
Nevada	State	CA00111	10-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

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

Job ID: 380-107731-1
SDG: Weekly

Laboratory: Eurofins Calscience (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4175	02-02-25
USDA	US Federal Programs	P330-22-00059	06-08-26
Washington	State	C916-18	10-11-24

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Method Summary

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

Job ID: 380-107731-1
SDG: Weekly

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
625.1	Semivolatile Organic Compounds (GC/MS)	EPA	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B GRO LL	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
525.2	Extraction of Semivolatile Compounds	EPA	EA POM
625.1	Liquid-Liquid Extraction	40CFR136A	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

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

Laboratory References:

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

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

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

Job ID: 380-107731-1
SDG: Weekly

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
380-107731-1	Halawa Shaft Viewing Pool	Water	08/06/24 09:30	08/08/24 09:56
380-107731-2	TRIP BLANK	Water	08/06/24 09:30	08/08/24 09:56

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-107731-1

SDG Number: Weekly

Login Number: 107731

List Number: 1

Creator: Gerfen, Chris

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-107731-1

SDG Number: Weekly

Login Number: 107731

List Number: 2

Creator: Aguilera, Ernan

List Source: Eurofins Calscience

List Creation: 08/09/24 03:32 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
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	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

