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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
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Generated 7/11/2023 8:36:29 PM

JOB DESCRIPTION

RED-HILL

JOB NUMBER

380-44261-1

Eurofins Eaton Analytical Pomona

Job Notes

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

The test results in this report relate only to the samples as received by the laboratory and will 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: 380-44261-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^3-	Reporting Limit Check Standard is outside acceptance limits, low biased.
^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 VOA TICs

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
B	Analyte was found in the associated method blank.
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
B	Analyte was found in the associated method blank.
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.

GC Semi VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
^2	Cal bration Blank (ICB and/or CCB) is outside acceptance limits.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^2	Cal bration Blank (ICB and/or CCB) is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
^2	Cal bration Blank (ICB and/or CCB) is outside acceptance limits.
F1	MS and/or MSD recovery exceeds control limits.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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

Definitions/Glossary

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

Job ID: 380-44261-1

Glossary (Continued)

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

Case Narrative

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

Job ID: 380-44261-1

Job ID: 380-44261-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-44261-1

Comments

No additional comments.

Receipt

The samples were received on 4/19/2023 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 8 coolers at receipt time were 2.2° C, 3.6° C, 3.9° C, 3.9° C, 4.8° C, 4.9° C, 5.4° C and 5.6° C.

GC/MS VOA

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

GC/MS Semi VOA

Method 525.2 LL: The low level laboratory control sample (LLCS) for preparation batch 810-57414 and analytical batch 810-57529 recovered outside control limits (50-150%) for the following analytes: Chloroneb @ 0%, Endosulfan I @ 0%, Endosulfan II @ 0%, Ethyl Parathion @ 0%, and Malathion @ 0%. The spike amount is 20% or less of the respective reporting limits. These analytes were not detected in the LLCS and were not detected in the associated samples.

Method 525.2 LL: The method blank associated with preparation batch 810-57414 and analytical batch 810-57529 contained Di-n-butyl phthalate @ 0.186 ug/L, greater than one-third the reporting limit (RL - 0.1 ug/L). The result for this analyte was less than the reporting limit in the associated samples.

Method 525.2 LL: The low level laboratory control sample (LLCS) for preparation batch 810-57414 and analytical batch 810-57529 recovered outside control limits (50-150%) for the following analytes: Alachlor @ 162%, Di (2-ethylhexyl)phthalate @ 598%, Bromacil @ 189%, Butachlor @ 167%, Butylbenzylphthalate @ 277%, Chlorobenzilate @ 178%, Chlorothalonil @ 152%, Di(2-ethylhexyl)adipate @ 173%, Diethylphthalate @ 187%, Dimethylphthalate @ 192%, Di-n-butyl phthalate @ 1367%, Di-n-octyl phthalate @ 224%, Isophorone @ 251%, Pendimethalin @ 270%, Simazine @ 211%, Terbacil @ 242%, and Trifluralin @ 159%. The spike amount is 20% or less of the respective reporting limits. These analytes were biased high in the LLCS 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.

HPLC/IC

Method 300.0: The continuing calibration blank (CCB) for analytical batch 380-37378 contained Sulfate above the method detection limit (MDL), but below the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 300.0: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 380-37378 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

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

GC Semi VOA

Method 505: Internal standard (ISTD) response at 250% for the following sample was outside acceptance limits of 50-150%: AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-44261-1). The hexane extraction solution(505 Ext Soln_00051) used to extract this prep batch was spiked with an Internal standard concentration of 0.0084 ug/L instead of the target 0.0035 ug/L. The analyte targets in all QC quantitated correctly and within range when adjusted for the corrected IS amount however the ISTD amount failed high against the previous ISTD calibration. An internal standard is not required by the EPA 505 method. Sample results are not affected. Samples are out of hold time and cannot be re-extracted.

Method 505: Internal standard (ISTD) response at 243% for the following sample was outside of acceptance limits of 50-150% : (LLCS 810-57403/2-A). The hexane extraction solution(505 Ext Soln_00051) used to extract this prep batch was spiked with an Internal standard concentration of 0.0084 ug/L instead of the target 0.0035 ug/L. The analyte targets in all QC quantitated correctly and within range when

Case Narrative

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

Job ID: 380-44261-1

Job ID: 380-44261-1 (Continued)

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

adjusted for the corrected IS amount however the ISTD amount failed high against the previous ISTD calibration. An internal standard is not required by the EPA 505 method. Sample results are not affected. Samples are out of hold time and cannot be re-extracted.

Method 505: Internal standard (ISTD) response at 246% for the following sample was outside of acceptance limits of 50-150%: (LLCS 810-57403/3-A). The hexane extraction solution(505 Ext Soln_00051) used to extract this prep batch was spiked with an Internal standard concentration of 0.0084 ug/L instead of the target 0.0035 ug/L. The analyte targets in all QC quantitated correctly and within range when adjusted for the corrected IS amount however the ISTD amount failed high against the previous ISTD calibration. An internal standard is not required by the EPA 505 method. Sample results are not affected. Samples are out of hold time and cannot be re-extracted.

Method 505: Internal standard (ISTD) response at 242% for the following sample was outside of acceptance limits of 50-150%: (CCV 810-57403/4-A). The hexane extraction solution(505 Ext Soln_00051) used to extract this prep batch was spiked with an Internal standard concentration of 0.0084 ug/L instead of the target 0.0035 ug/L. The analyte targets in all QC quantitated correctly and within range when adjusted for the corrected IS amount however the ISTD amount failed high against the previous ISTD calibration. An internal standard is not required by the EPA 505 method. Sample results are not affected. Samples are out of hold time and cannot be re-extracted.

Method 505: Internal standard (ISTD) response at 245% for the following sample was outside of acceptance limits of 50-150%: (MB 810-57403/1-A). The hexane extraction solution(505 Ext Soln_00051) used to extract this prep batch was spiked with an Internal standard concentration of 0.0084 ug/L instead of the target 0.0035 ug/L. The analyte targets in all QC quantitated correctly and within range when adjusted for the corrected IS amount however the ISTD amount failed high against the previous ISTD calibration. An internal standard is not required by the EPA 505 method. Sample results are not affected. Samples are out of hold time and cannot be re-extracted.

Method 505: Internal standard (ISTD) response at 258% for the following sample was outside acceptance limits of 50-150%: (CCV 810-57403/5-A). The hexane extraction solution(505 Ext Soln_00051) used to extract this prep batch was spiked with an Internal standard concentration of 0.0084 ug/L instead of the target 0.0035 ug/L. The analyte targets in all QC quantitated correctly and within range when adjusted for the corrected IS amount however the ISTD amount failed high against the previous ISTD calibration. An internal standard is not required by the EPA 505 method. Sample results are not affected. Samples are out of hold time and cannot be re-extracted.

Method 505: Internal standard (ISTD) response at 248% for the following sample was outside acceptance limits of 50-150%: (CCV 810-57403/6-A). The hexane extraction solution(505 Ext Soln_00051) used to extract this prep batch was spiked with an Internal standard concentration of 0.0084 ug/L instead of the target 0.0035 ug/L. The analyte targets in all QC quantitated correctly and within range when adjusted for the corrected IS amount however the ISTD amount failed high against the previous ISTD calibration. An internal standard is not required by the EPA 505 method. Sample results are not affected. Samples are out of hold time and cannot be re-extracted.

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

Metals

Method 200.8: The continuing calibration blank (CCB) for analytical batch 380-37574 contained Silver above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

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

General Chemistry

Method SM 4500 S2 D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 380-37601 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

Subcontract non-Sister

See attached subcontract report.

Organic Prep

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

Case Narrative

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

Job ID: 380-44261-1

Job ID: 380-44261-1 (Continued)

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

Subcontract Work

Methods 8015 Ethanol, 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 Acid/Base/PAH + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.

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Detection Summary

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
 (331-202-TP072)**
PWSID Number: HI0000331

Lab Sample ID: 380-44261-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Bromide	140		5.0	ug/L	1		300.0	Total/NA
Chloride	90		1.0	mg/L	2		300.0	Total/NA
Nitrate as N	0.52		0.10	mg/L	2		300.0	Total/NA
Sulfate	12	^2	0.50	mg/L	2		300.0	Total/NA
Calcium	22		1.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	17		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	2.3		1.0	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	32		1.0	mg/L	1		200.7 Rev 4.4	Total/NA
Chromium	1.6		1.0	ug/L	1		200.8	Total Recoverable
Copper	5.2		2.0	ug/L	1		200.8	Total Recoverable
A kalinity	53		2.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	53	^2	2.0	mg/L	1		SM 2320B	Total/NA
Specific Conductance	420		2.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	270		20	mg/L	1		SM 2540C	Total/NA
pH	7.9	HF		SU	1		SM 4500 H+ B	Total/NA
Benzoic Acid	0.297		0.2	0.1 ug/L	1		625 Acid/Base/PAH + TICs	Total/NA

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-44261-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-44261-1

Date Collected: 04/18/23 10:00

Matrix: Drinking Water

Date Received: 04/19/23 10:15

PWSID Number: HI0000331

Method: EPA-DW 524.2 - Total Trihalomethanes

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trihalomethanes, Total	ND		0.50	ug/L			04/28/23 12:50	1

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tertiary Butyl Alcohol (TBA)	ND		2.0	ug/L			04/27/23 19:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		04/27/23 19:16	1
4-Bromofluorobenzene (Surr)	106		70 - 130		04/27/23 19:16	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		04/27/23 19:16	1

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND	*+	0.50	ug/L			04/26/23 14:38	1
1,1,1-Trichloroethane	ND		0.50	ug/L			04/26/23 14:38	1
1,1,1,2,2-Tetrachloroethane	ND	*+	0.50	ug/L			04/26/23 14:38	1
1,1,2-Trichloroethane	ND		0.50	ug/L			04/26/23 14:38	1
1,1-Dichlorethylene	ND		0.50	ug/L			04/26/23 14:38	1
1,1-Dichloroethane	ND		0.50	ug/L			04/26/23 14:38	1
1,1-Dichloropropene	ND		0.50	ug/L			04/26/23 14:38	1
1,2,3-Trichlorobenzene	ND		0.50	ug/L			04/26/23 14:38	1
1,2,3-Trichloropropane	ND	*+	0.50	ug/L			04/26/23 14:38	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			04/26/23 14:38	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			04/26/23 14:38	1
1,2-Dichloroethane	ND		0.50	ug/L			04/26/23 14:38	1
1,2-Dichloropropane	ND		0.50	ug/L			04/26/23 14:38	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			04/26/23 14:38	1
1,3-Dichloropropane	ND		0.50	ug/L			04/26/23 14:38	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			04/26/23 14:38	1
2,2-Dichloropropane	ND		0.50	ug/L			04/26/23 14:38	1
2-Butanone (MEK)	ND		5.0	ug/L			04/26/23 14:38	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			04/26/23 14:38	1
Acetone	ND	^3+ *+	500	ug/L			04/26/23 14:38	1
Benzene	ND		0.50	ug/L			04/26/23 14:38	1
Bromobenzene	ND		0.50	ug/L			04/26/23 14:38	1
Bromochloromethane	ND		0.50	ug/L			04/26/23 14:38	1
Bromodichloromethane	ND	*+	0.50	ug/L			04/26/23 14:38	1
Bromoethane	ND		0.50	ug/L			04/26/23 14:38	1
Bromoform	ND	*+	0.50	ug/L			04/26/23 14:38	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			04/26/23 14:38	1
Carbon disulfide	ND		0.50	ug/L			04/26/23 14:38	1
Carbon tetrachloride	ND		0.50	ug/L			04/26/23 14:38	1
Chlorobenzene	ND		0.50	ug/L			04/26/23 14:38	1
Chlorodibromomethane	ND		0.50	ug/L			04/26/23 14:38	1
Chloroethane	ND		0.50	ug/L			04/26/23 14:38	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			04/26/23 14:38	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			04/26/23 14:38	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			04/26/23 14:38	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			04/26/23 14:38	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-44261-1

Date Collected: 04/18/23 10:00

Matrix: Drinking Water

Date Received: 04/19/23 10:15

PWSID Number: HI0000331

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	ug/L			04/26/23 14:38	1
Dichlorodifluoromethane	ND		0.50	ug/L			04/26/23 14:38	1
Dichloromethane	ND		0.50	ug/L			04/26/23 14:38	1
Diisopropyl ether	ND		3.0	ug/L			04/26/23 14:38	1
Ethylbenzene	ND		0.50	ug/L			04/26/23 14:38	1
Hexachlorobutadiene	ND		0.50	ug/L			04/26/23 14:38	1
Isopropyl benzene	ND		0.50	ug/L			04/26/23 14:38	1
m,p-Xylenes	ND		0.50	ug/L			04/26/23 14:38	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			04/26/23 14:38	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			04/26/23 14:38	1
Naphthalene	ND	^3-	0.50	ug/L			04/26/23 14:38	1
n-Butylbenzene	ND		0.50	ug/L			04/26/23 14:38	1
N-Propylbenzene	ND		0.50	ug/L			04/26/23 14:38	1
o-Chlorotoluene	ND		0.50	ug/L			04/26/23 14:38	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			04/26/23 14:38	1
o-Xylene	ND		0.50	ug/L			04/26/23 14:38	1
p-Chlorotoluene	ND		0.50	ug/L			04/26/23 14:38	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			04/26/23 14:38	1
p-Isopropyltoluene	ND		0.50	ug/L			04/26/23 14:38	1
sec-Butylbenzene	ND		0.50	ug/L			04/26/23 14:38	1
Styrene	ND		0.50	ug/L			04/26/23 14:38	1
Tert-amyl methyl ether	ND		3.0	ug/L			04/26/23 14:38	1
Tert-butyl ethyl ether	ND		3.0	ug/L			04/26/23 14:38	1
tert-Butylbenzene	ND		0.50	ug/L			04/26/23 14:38	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			04/26/23 14:38	1
Toluene	ND		0.50	ug/L			04/26/23 14:38	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			04/26/23 14:38	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			04/26/23 14:38	1
Trichloroethylene (TCE)	ND		0.50	ug/L			04/26/23 14:38	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			04/26/23 14:38	1
Trichlorotrifluoroethane	ND		0.50	ug/L			04/26/23 14:38	1
Vinyl Chloride (VC)	ND		0.30	ug/L			04/26/23 14:38	1
Xylenes, Total	ND		0.50	ug/L			04/26/23 14:38	1

<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Tentatively Identified Compound</i>	<i>None</i>		<i>ug/L</i>			<i>N/A</i>		<i>04/26/23 14:38</i>	<i>1</i>

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	<i>103</i>		<i>70 - 130</i>		<i>04/26/23 14:38</i>	<i>1</i>
<i>4-Bromofluorobenzene (Surr)</i>	<i>108</i>		<i>70 - 130</i>		<i>04/26/23 14:38</i>	<i>1</i>
<i>Toluene-d8 (Surr)</i>	<i>95</i>		<i>70 - 130</i>		<i>04/26/23 14:38</i>	<i>1</i>

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alachlor	ND	*+	0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Benzo[a]anthracene	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Aldrin	ND		0.0098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Benzo[b]fluoranthene	ND		0.020	ug/L		05/02/23 08:16	05/03/23 00:42	1
Benzo[k]fluoranthene	ND		0.020	ug/L		05/02/23 08:16	05/03/23 00:42	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-44261-1

Date Collected: 04/18/23 10:00

Matrix: Drinking Water

Date Received: 04/19/23 10:15

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	ND		0.0098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Benzo[a]pyrene	ND		0.020	ug/L		05/02/23 08:16	05/03/23 00:42	1
Endrin	ND		0.0098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Heptachlor	ND		0.0098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Butylbenzylphthalate	ND	*+	0.49	ug/L		05/02/23 08:16	05/03/23 00:42	1
Heptachlor epoxide	ND		0.0098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Methoxychlor	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
gamma-BHC (Lindane)	ND		0.0098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Acenaphthylene	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Atrazine	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Chlorobenzilate	ND	*+	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
trans-Nonachlor	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
alpha-Chlordane	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
gamma-Chlordane	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Butachlor	ND	*+	0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Bromacil	ND	*+	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Chlorothalonil	ND	*+	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Chlorpyrifos	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
4,4'-DDD	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
4,4'-DDT	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Di-n-butyl phthalate	ND	*+ B	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Dichlorvos	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Diethylphthalate	ND	*+	0.49	ug/L		05/02/23 08:16	05/03/23 00:42	1
Di(2-ethylhexyl)adipate	ND	*+	0.59	ug/L		05/02/23 08:16	05/03/23 00:42	1
Di (2-ethylhexyl)phthalate	ND	*+	0.59	ug/L		05/02/23 08:16	05/03/23 00:42	1
Dimethylphthalate	ND	*+	0.49	ug/L		05/02/23 08:16	05/03/23 00:42	1
Endosulfan I	ND	*-	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Endosulfan II	ND	*-	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Endosulfan sulfate	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Endrin aldehyde	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Hexachlorobenzene	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
alpha-BHC	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
beta-BHC	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
delta-BHC	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Isophorone	ND	*+	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Metolachlor	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Molinate	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Propachlor	ND		0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Simazine	ND	*+	0.049	ug/L		05/02/23 08:16	05/03/23 00:42	1
Terbacil	ND	*+	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Trifluralin	ND	*+	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Chloroneb	ND	*-	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Fluoranthene	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Thiobencarb	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Parathion	ND	*-	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-44261-1

Date Collected: 04/18/23 10:00

Matrix: Drinking Water

Date Received: 04/19/23 10:15

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	ND	*+	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Malathion	ND	*-	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Pendimethalin	ND	*+	0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1
Terbutylazine	ND		0.098	ug/L		05/02/23 08:16	05/03/23 00:42	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	05/02/23 08:16	05/03/23 00:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	101		70 - 130	05/02/23 08:16	05/03/23 00:42	1
Perylene-d12 (Surr)	98		70 - 130	05/02/23 08:16	05/03/23 00:42	1
Triphenylphosphate (Surr)	112		70 - 130	05/02/23 08:16	05/03/23 00:42	1

Method: EPA-DW2 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.040	ug/L		04/25/23 13:05	04/26/23 05:35	1
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		04/25/23 13:05	04/26/23 05:35	1
1,2-D bromoethane	ND		0.010	ug/L		04/25/23 13:05	04/26/23 05:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane (Surr)	101		60 - 140	04/25/23 13:05	04/26/23 05:35	1

Method: EPA 505 - Organochlorine Pesticides/PCBs (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND	*3	0.080	ug/L		05/02/23 09:25	05/03/23 06:46	1
PCB-1221	ND	*3	0.10	ug/L		05/02/23 09:25	05/03/23 06:46	1
PCB-1232	ND	*3	0.10	ug/L		05/02/23 09:25	05/03/23 06:46	1
PCB-1242	ND	*3	0.10	ug/L		05/02/23 09:25	05/03/23 06:46	1
PCB-1248	ND	*3	0.10	ug/L		05/02/23 09:25	05/03/23 06:46	1
PCB-1254	ND	*3	0.10	ug/L		05/02/23 09:25	05/03/23 06:46	1
PCB-1260	ND	*3	0.10	ug/L		05/02/23 09:25	05/03/23 06:46	1
Chlordane (technical)	ND	*3	0.10	ug/L		05/02/23 09:25	05/03/23 06:46	1
Toxaphene	ND	*3	0.50	ug/L		05/02/23 09:25	05/03/23 06:46	1
Total PCBs as DCB (Qualitative)	ND		0.10	ug/L		05/02/23 09:25	05/03/23 06:46	1
Polychlorinated biphenyls, Total	ND		0.10	ug/L		05/02/23 09:25	05/03/23 06:46	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	140		5.0	ug/L			04/21/23 10:00	1
Chloride	90		1.0	mg/L			04/20/23 00:01	2
Nitrate as N	0.52		0.10	mg/L			04/20/23 00:01	2
Nitrite as N	ND		0.10	mg/L			04/20/23 00:01	2
Sulfate	12	^2	0.50	mg/L			04/20/23 00:01	2

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	22		1.0	mg/L			04/24/23 21:18	1
Magnesium	17		0.10	mg/L			04/24/23 21:18	1
Potassium	2.3		1.0	mg/L			04/24/23 21:18	1
Sodium	32		1.0	mg/L			04/24/23 21:18	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-44261-1

Date Collected: 04/18/23 10:00

Matrix: Drinking Water

Date Received: 04/19/23 10:15

PWSID Number: HI0000331

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:47	1
Arsenic	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:47	1
Beryllium	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:47	1
Cadmium	ND		0.50	ug/L		04/20/23 12:18	04/20/23 19:47	1
Chromium	1.6		1.0	ug/L		04/20/23 12:18	04/20/23 19:47	1
Copper	5.2		2.0	ug/L		04/20/23 12:18	04/20/23 19:47	1
Lead	ND		0.50	ug/L		04/20/23 12:18	04/20/23 19:47	1
Nickel	ND		5.0	ug/L		04/20/23 12:18	04/20/23 19:47	1
Selenium	ND		5.0	ug/L		04/20/23 12:18	04/20/23 19:47	1
Silver	ND	^2	0.50	ug/L		04/20/23 12:18	04/20/23 19:47	1
Thallium	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:47	1
Zinc	ND		20	ug/L		04/20/23 12:18	04/20/23 19:47	1

Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.10	ug/L		04/26/23 18:55	04/26/23 23:08	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B)	53		2.0	mg/L			04/24/23 16:20	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	53	^2	2.0	mg/L			04/24/23 16:20	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		2.0	mg/L			04/24/23 16:20	1
Specific Conductance (SM 2510B)	420		2.0	umhos/cm			04/24/23 16:20	1
Total Dissolved Solids (SM 2540C)	270		20	mg/L			04/20/23 22:37	1
Fluoride (SM 4500 F C)	ND		0.050	mg/L			04/24/23 18:55	1
pH (SM 4500 H+ B)	7.9	HF		SU			04/24/23 16:20	1
Sulfide (SM 4500 S2 D)	ND	F1	0.050	mg/L			04/21/23 14:25	1

Method: 625 Acid/Base/PAH + 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		04/20/23 00:00	05/05/23 11:10	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
2,4,5-Trichlorophenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
2,4,6-Trichlorophenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
2,4-Dichlorophenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
2,4-Dinitrophenol	ND		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
2,6-Dichlorophenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
2,6-Di-tert-butyl-4-methylphenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/05/23 11:10	1
2,6-Di-tert-butylphenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/05/23 11:10	1
2-Chloronaphthalene	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
2-Chlorophenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
2-Methyl-4,6-dinitrophenol	ND		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
2-Methylphenol	ND		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
2-Nitroaniline	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-44261-1

Date Collected: 04/18/23 10:00

Matrix: Drinking Water

Date Received: 04/19/23 10:15

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	ND		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
3+4-Methylphenol	ND		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
3-Nitroaniline	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
4-Bromophenylphenyl ether	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
4-Chloro-3-methylphenol	ND		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
4-Chloroaniline	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
4-Chlorophenylphenyl ether	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
4-Nitroaniline	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
4-Nitrophenol	ND		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
6-tert-butyl-2,4-dimethylphenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/05/23 11:10	1
Acenaphthene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Acenaphthylene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Aniline	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
Anthracene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Benzidine	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Benzoic Acid	0.297		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
Benzyl Alcohol	ND		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
Biphenyl	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Bis(2-Chloroethoxy) methane	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
Bis(2-Chloroethyl) ether	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
Bis(2-Chloroisopropyl) ether	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
Chrysene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Dibenzofuran	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
Dibenzothiophene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		04/20/23 00:00	05/05/23 11:10	1
Fluoranthene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Fluorene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Hexachloroethane	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Naphthalene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Nitrobenzene	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
N-Nitrosodi-n-propylamine	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
N-Nitrosodiphenylamine	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
Pentachlorophenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/11/23 19:27	1
Perylene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Phenanthrene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1
Phenol	ND		0.2	0.1	µg/L		04/20/23 00:00	05/11/23 19:27	1
p-tert-Butylphenol	ND		0.1	0.05	µg/L		04/20/23 00:00	05/05/23 11:10	1
Pyrene	ND		0.005	0.001	µg/L		04/20/23 00:00	05/05/23 11:10	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-44261-1

Date Collected: 04/18/23 10:00
Date Received: 04/19/23 10:15

Matrix: Drinking Water
PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(2,4,6-Tribromophenol)	47		31 - 143	04/20/23 00:00	05/11/23 19:27	1
(d10-Acenaphthene)	42		27 - 133	04/20/23 00:00	05/05/23 11:10	1
(d10-Phenanthrene)	70		43 - 129	04/20/23 00:00	05/05/23 11:10	1
(d12-Chrysene)	76		52 - 144	04/20/23 00:00	05/05/23 11:10	1
(d12-Perylene)	69		36 - 161	04/20/23 00:00	05/05/23 11:10	1
(d5-Phenol)	17		0 - 85	04/20/23 00:00	05/11/23 19:27	1
(d8-Naphthalene)	43		25 - 125	04/20/23 00:00	05/05/23 11:10	1

Method: 8015 Ethanol - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ETHANOL	ND	U	2000		ug/L			04/21/23 15:00	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			04/25/23 14:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	92		60 - 140		04/25/23 14:27	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	0.025		mg/L			04/28/23 18:49	1
JP5	ND	U	0.051		mg/L			04/28/23 18:49	1
JP8	ND	U	0.051		mg/L			04/28/23 18:49	1
MOTOR OIL	ND	U	0.051		mg/L			04/28/23 18:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	76		60 - 130		04/28/23 18:49	1
HEXACOSANE	86		60 - 130		04/28/23 18:49	1

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-44261-2

Date Collected: 04/18/23 10:00
Date Received: 04/19/23 10:15

Matrix: Water

Method: EPA-DW 524.2 - Total Trihalomethanes

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trihalomethanes, Total	ND		0.50	ug/L			04/28/23 12:50	1

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tertiary Butyl Alcohol (TBA)	ND		2.0	ug/L			04/27/23 19:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		04/27/23 19:39	1
4-Bromofluorobenzene (Surr)	102		70 - 130		04/27/23 19:39	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		04/27/23 19:39	1

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND	*+	0.50	ug/L			04/26/23 14:59	1
1,1,1-Trichloroethane	ND		0.50	ug/L			04/26/23 14:59	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-44261-1

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-44261-2

Date Collected: 04/18/23 10:00

Matrix: Water

Date Received: 04/19/23 10:15

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND	*+	0.50	ug/L			04/26/23 14:59	1
1,1,2-Trichloroethane	ND		0.50	ug/L			04/26/23 14:59	1
1,1-Dichloroethane	ND		0.50	ug/L			04/26/23 14:59	1
1,1-Dichloroethylene	ND		0.50	ug/L			04/26/23 14:59	1
1,1-Dichloropropene	ND		0.50	ug/L			04/26/23 14:59	1
1,2,3-Trichlorobenzene	ND		0.50	ug/L			04/26/23 14:59	1
1,2,3-Trichloropropane	ND	*+	0.50	ug/L			04/26/23 14:59	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			04/26/23 14:59	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			04/26/23 14:59	1
1,2-Dichloroethane	ND		0.50	ug/L			04/26/23 14:59	1
1,2-Dichloropropane	ND		0.50	ug/L			04/26/23 14:59	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			04/26/23 14:59	1
1,3-Dichloropropane	ND		0.50	ug/L			04/26/23 14:59	1
2,2-Dichloropropane	ND		0.50	ug/L			04/26/23 14:59	1
2-Butanone (MEK)	ND		5.0	ug/L			04/26/23 14:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			04/26/23 14:59	1
Acetone	ND	^3+ *+	500	ug/L			04/26/23 14:59	1
Benzene	ND		0.50	ug/L			04/26/23 14:59	1
Bromobenzene	ND		0.50	ug/L			04/26/23 14:59	1
Bromochloromethane	ND		0.50	ug/L			04/26/23 14:59	1
Bromodichloromethane	ND	*+	0.50	ug/L			04/26/23 14:59	1
Bromoform	ND	*+	0.50	ug/L			04/26/23 14:59	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			04/26/23 14:59	1
Carbon disulfide	ND		0.50	ug/L			04/26/23 14:59	1
Carbon tetrachloride	ND		0.50	ug/L			04/26/23 14:59	1
Chlorobenzene	ND		0.50	ug/L			04/26/23 14:59	1
Chlorodibromomethane	ND		0.50	ug/L			04/26/23 14:59	1
Chloroethane	ND		0.50	ug/L			04/26/23 14:59	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			04/26/23 14:59	1
Dichloromethane	ND		0.50	ug/L			04/26/23 14:59	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			04/26/23 14:59	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			04/26/23 14:59	1
Dibromomethane	ND		0.50	ug/L			04/26/23 14:59	1
Dichlorodifluoromethane	ND		0.50	ug/L			04/26/23 14:59	1
Ethylbenzene	ND		0.50	ug/L			04/26/23 14:59	1
Hexachlorobutadiene	ND		0.50	ug/L			04/26/23 14:59	1
Isopropy benzene	ND		0.50	ug/L			04/26/23 14:59	1
m,p-Xylenes	ND		0.50	ug/L			04/26/23 14:59	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			04/26/23 14:59	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			04/26/23 14:59	1
Naphthalene	ND	^3-	0.50	ug/L			04/26/23 14:59	1
n-Butylbenzene	ND		0.50	ug/L			04/26/23 14:59	1
N-Propylbenzene	ND		0.50	ug/L			04/26/23 14:59	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			04/26/23 14:59	1
o-Chlorotoluene	ND		0.50	ug/L			04/26/23 14:59	1
o-Xylene	ND		0.50	ug/L			04/26/23 14:59	1
p-Chlorotoluene	ND		0.50	ug/L			04/26/23 14:59	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			04/26/23 14:59	1
p-Isopropyltoluene	ND		0.50	ug/L			04/26/23 14:59	1

Client Sample Results

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

Job ID: 380-44261-1

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-44261-2

Date Collected: 04/18/23 10:00

Matrix: Water

Date Received: 04/19/23 10:15

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	ND		0.50	ug/L			04/26/23 14:59	1
Styrene	ND		0.50	ug/L			04/26/23 14:59	1
Tert-amyl methyl ether	ND		3.0	ug/L			04/26/23 14:59	1
Tert-butyl ethyl ether	ND		3.0	ug/L			04/26/23 14:59	1
tert-Butylbenzene	ND		0.50	ug/L			04/26/23 14:59	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			04/26/23 14:59	1
Toluene	ND		0.50	ug/L			04/26/23 14:59	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			04/26/23 14:59	1
Xylenes, Total	ND		0.50	ug/L			04/26/23 14:59	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			04/26/23 14:59	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			04/26/23 14:59	1
Trichloroethylene (TCE)	ND		0.50	ug/L			04/26/23 14:59	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			04/26/23 14:59	1
Vinyl Chloride (VC)	ND		0.30	ug/L			04/26/23 14:59	1
Trichlorotrifluoroethane	ND		0.50	ug/L			04/26/23 14:59	1
Bromoethane	ND		0.50	ug/L			04/26/23 14:59	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			04/26/23 14:59	1
Diisopropyl ether	ND		3.0	ug/L			04/26/23 14:59	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Acetaldehyde	3.7	T J N	ug/L		1.63	75-07-0		04/26/23 14:59	1
Tetrahydrofuran	15	^3+ B	ug/L		5.77	109-99-9		04/26/23 14:59	1
Furfural	2.1	T J N	ug/L		10.18	98-01-1		04/26/23 14:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		04/26/23 14:59	1
4-Bromofluorobenzene (Surr)	104		70 - 130		04/26/23 14:59	1
Toluene-d8 (Surr)	92		70 - 130		04/26/23 14:59	1

Method: EPA-DW2 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.040	ug/L		04/25/23 13:05	04/26/23 06:16	1
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		04/25/23 13:05	04/26/23 06:16	1
1,2-D bromoethane	ND		0.010	ug/L		04/25/23 13:05	04/26/23 06:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane (Surr)	97		60 - 140	04/25/23 13:05	04/26/23 06:16	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			04/25/23 16:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	87		60 - 140		04/25/23 16:17	1

Action Limit Summary

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-44261-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	HI Org	EPAMCL	EPAMCL	Method	Prep Type
				Limit	Limit	S Limit		
Trihalomethanes, Total	ND		ug/L		80		524.2	Total/NA
1,1,1-Trichloroethane	ND		ug/L	200.0	200		524.2	Total/NA
1,1,2-Trichloroethane	ND		ug/L	5.000	5		524.2	Total/NA
1,1-Dichloroethylene	ND		ug/L	7.000	7		524.2	Total/NA
1,2,3-Trichloropropane	ND	*+	ug/L	0.6000			524.2	Total/NA
1,2,4-Trichlorobenzene	ND		ug/L	70.00	70		524.2	Total/NA
1,2-Dichloroethane	ND		ug/L	5.000	5		524.2	Total/NA
1,2-Dichloropropane	ND		ug/L	5.000	5		524.2	Total/NA
Benzene	ND		ug/L	5.000	5		524.2	Total/NA
Carbon tetrachloride	ND		ug/L	5.000	5		524.2	Total/NA
Chlorobenzene	ND		ug/L	100.0	100		524.2	Total/NA
cis-1,2-Dichloroethylene	ND		ug/L	70.00	70		524.2	Total/NA
Dichloromethane	ND		ug/L	5.000	5		524.2	Total/NA
Ethylbenzene	ND		ug/L	700.0	700		524.2	Total/NA
o-Dichlorobenzene (1,2-DCB)	ND		ug/L	600.0	600		524.2	Total/NA
p-Dichlorobenzene (1,4-DCB)	ND		ug/L	75.000	75		524.2	Total/NA
Styrene	ND		ug/L	100.0	100		524.2	Total/NA
Tetrachloroethene (PCE)	ND		ug/L	5.000	5		524.2	Total/NA
Toluene	ND		ug/L	1000	1000		524.2	Total/NA
trans-1,2-Dichloroethylene	ND		ug/L	100.0	100		524.2	Total/NA
Trichloroethylene (TCE)	ND		ug/L	5.000	5		524.2	Total/NA
Vinyl Chloride (VC)	ND		ug/L	2.000	2		524.2	Total/NA
Xylenes, Total	ND		ug/L	10000	10000		524.2	Total/NA
Alachlor	ND	*+	ug/L		2		525.2 LL	Total/NA
Benzo[a]pyrene	ND		ug/L		0.2		525.2 LL	Total/NA
Endrin	ND		ug/L		2		525.2 LL	Total/NA
Heptachlor	ND		ug/L		0.4		525.2 LL	Total/NA
Heptachlor epoxide	ND		ug/L		0.2		525.2 LL	Total/NA
Methoxychlor	ND		ug/L		40		525.2 LL	Total/NA
gamma-BHC (Lindane)	ND		ug/L		0.2		525.2 LL	Total/NA
Atrazine	ND		ug/L		3		525.2 LL	Total/NA
Di(2-ethylhexyl)adipate	ND	*+	ug/L		400		525.2 LL	Total/NA
Di (2-ethylhexyl)phthalate	ND	*+	ug/L		6		525.2 LL	Total/NA
Hexachlorobenzene	ND		ug/L		1		525.2 LL	Total/NA
Hexachlorocyclopentadiene	ND		ug/L		50		525.2 LL	Total/NA
Simazine	ND	*+	ug/L		4		525.2 LL	Total/NA
1,2,3-Trichloropropane	ND		ug/L	0.6000			504.1	Total/NA
1,2-D bromo-3-Chloropropane	ND		ug/L		0.2		504.1	Total/NA
1,2-D bromoethane	ND		ug/L		0.05		504.1	Total/NA
Chlordane (technical)	ND	*3	ug/L		2		505	Total/NA
Toxaphene	ND	*3	ug/L		3		505	Total/NA
Polychlorinated biphenyls, Total	ND		ug/L		0.5		505	Total/NA
Chloride	90		mg/L			250	300.0	Total/NA
Nitrate as N	0.52		mg/L		10		300.0	Total/NA
Nitrite as N	ND		mg/L		1		300.0	Total/NA

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-44261-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-44261-1

(331-202-TP072) (Continued)

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	HI Org	EPAMCL	EPAMCL	Method	Prep Type
				Limit	Limit	S		
Sulfate	12	^2	mg/L			250	300.0	Total/NA
Mercury	ND		ug/L		2		245.1	Total/NA
Total Dissolved Solids	270		mg/L			500	SM 2540C	Total/NA
Fluoride	ND		mg/L		4	2	SM 4500 F C	Total/NA

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-44261-2

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	HI Org	EPAMCL	RL	Method	Prep Type
				Limit	Limit			
Trihalomethanes, Total	ND		ug/L		80	0.50	524.2	Total/NA
1,1,1-Trichloroethane	ND		ug/L	200.0	200	0.50	524.2	Total/NA
1,1,2-Trichloroethane	ND		ug/L	5.000	5	0.50	524.2	Total/NA
1,1-Dichloroethylene	ND		ug/L	7.000	7	0.50	524.2	Total/NA
1,2,3-Trichloropropane	ND	+	ug/L	0.6000		0.50	524.2	Total/NA
1,2,4-Trichlorobenzene	ND		ug/L	70.00	70	0.50	524.2	Total/NA
1,2-Dichloroethane	ND		ug/L	5.000	5	0.50	524.2	Total/NA
1,2-Dichloropropane	ND		ug/L	5.000	5	0.50	524.2	Total/NA
Benzene	ND		ug/L	5.000	5	0.50	524.2	Total/NA
Carbon tetrachloride	ND		ug/L	5.000	5	0.50	524.2	Total/NA
Chlorobenzene	ND		ug/L	100.0	100	0.50	524.2	Total/NA
Dichloromethane	ND		ug/L	5.000	5	0.50	524.2	Total/NA
cis-1,2-Dichloroethylene	ND		ug/L	70.00	70	0.50	524.2	Total/NA
Ethylbenzene	ND		ug/L	700.0	700	0.50	524.2	Total/NA
o-Dichlorobenzene (1,2-DCB)	ND		ug/L	600.0	600	0.50	524.2	Total/NA
p-Dichlorobenzene (1,4-DCB)	ND		ug/L	75.000	75	0.50	524.2	Total/NA
Styrene	ND		ug/L	100.0	100	0.50	524.2	Total/NA
Tetrachloroethene (PCE)	ND		ug/L	5.000	5	0.50	524.2	Total/NA
Toluene	ND		ug/L	1000	1000	0.50	524.2	Total/NA
Xylenes, Total	ND		ug/L	10000	10000	0.50	524.2	Total/NA
trans-1,2-Dichloroethylene	ND		ug/L	100.0	100	0.50	524.2	Total/NA
Trichloroethylene (TCE)	ND		ug/L	5.000	5	0.50	524.2	Total/NA
Vinyl Chloride (VC)	ND		ug/L	2.000	2	0.30	524.2	Total/NA
1,2,3-Trichloropropane	ND		ug/L	0.6000		0.040	504.1	Total/NA
1,2-D bromo-3-Chloropropane	ND		ug/L		0.2	0.010	504.1	Total/NA
1,2-D bromoethane	ND		ug/L		0.05	0.010	504.1	Total/NA

Surrogate Summary

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS SIM)

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (70-130)	BFB (70-130)	DCA (70-130)
380-44261-1	AIEA GULCH WELLS PUMP 2 (	99	106	100

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 524.2 - Volatile Organic Compounds (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (70-130)	BFB (70-130)	DCA (70-130)
380-44261-2	TB:AIEA GULCH WELLS P2 (3	98	102	103
LCS 380-38220/2	Lab Control Sample	98	96	102
LCS 380-38220/3	Lab Control Sample Dup	99	100	101
MB 380-38220/5	Method Blank	99	93	105

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 524.2 - Volatile Organic Compounds (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (50-150)	BFB (50-150)	DCA (50-150)
MRL 380-38220/4	Lab Control Sample	98	97	104

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DCA (70-130)	BFB (70-130)	TOL (70-130)
380-44261-1	AIEA GULCH WELLS PUMP 2 (	103	108	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Surrogate Summary

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DCA (70-130)	BFB (70-130)	TOL (70-130)
380-44261-2	TB:AIEA GULCH WELLS P2 (33	103	104	92
LCS 380-38074/3	Lab Control Sample	101	102	102
LCSD 380-38074/4	Lab Control Sample Dup	98	101	100
MB 380-38074/8	Method Blank	104	109	97
MRL 380-38074/6	Lab Control Sample	106	103	97
MRL 380-38074/7	Lab Control Sample	105	106	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-44261-1	AIEA GULCH WELLS PUMP 2 (	101	98	112

Surrogate Legend

2NMX = 2-Nitro-m-xylene (Surr)

PRY = Perylene-d12 (Surr)

TPP = Triphenylphosphate (Surr)

Method: 525.2 LL - 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)
810-61248-O-5-A MS	Matrix Spike	103	103	117
860-47346-B-1-A DU	Duplicate	98	100	111
LCS 810-57414/3-A	Lab Control Sample	104	103	108
LLCS 810-57237/3-A	Lab Control Sample	98	100	107
LLCS 810-57414/2-A	Lab Control Sample	99	95	103
MB 810-57414/1-A	Method Blank	102	101	109

Surrogate Legend

2NMX = 2-Nitro-m-xylene (Surr)

PRY = Perylene-d12 (Surr)

TPP = Triphenylphosphate (Surr)

Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DBPP1 (60-140)
380-44261-1	AIEA GULCH WELLS PUMP 2 (	101

Surrogate Legend

DBPP = 1,2-D bromopropane (Surr)

Surrogate Summary

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

Job ID: 380-44261-1

Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DBPP1 (60-140)
380-44167-T-1-A MS	Matrix Spike	107
380-44182-I-1-A DU	Duplicate	93
380-44261-2	TB:AIEA GULCH WELLS P2 (331-202-TP072)	97
LCS 380-37791/3-A	Lab Control Sample	97
MBL 380-37791/4-A	Method Blank	103
MRL 380-37791/1-A	Lab Control Sample	99
MRL 380-37791/2-A	Lab Control Sample	108

Surrogate Legend

DBPP = 1,2-D bromopropane (Surr)

Method: 625 Acid/Base/PAH + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PHL (0-130)	TBP (30-130)
105222-B1	Method Blank	57	50
105222-BS1	Lab Control Sample	58	54
105222-BS2	Lab Control Sample Dup	64	54

Surrogate Legend

PHL = (d5-Phenol)

TBP = (2,4,6-Tribromophenol)

Method: 625 Acid/Base/PAH + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Acenaphth (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
105222-B1	Method Blank	73	76	65	54	82
105222-BS1	Lab Control Sample	54	71	63	53	81
105222-BS2	Lab Control Sample Dup	73	76	68	62	77

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

Method: 625 Acid/Base/PAH + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PHL (0-85)	TBP (31-143)
380-44261-1	AIEA GULCH WELLS PUMP 2 (	17	47

Surrogate Legend

PHL = (d5-Phenol)

TBP = (2,4,6-Tribromophenol)

Surrogate Summary

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

Job ID: 380-44261-1

Method: 625 Acid/Base/PAH + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-44261-1	AIEA GULCH WELLS PUMP 2 (	42	70	76	43	69

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

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-44261-1	AIEA GULCH WELLS PUMP 2 (	92

Surrogate Legend
BFB = BROMOFLUOROBENZENE

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-44261-2	TB:AIEA GULCH WELLS P2 (3	87

Surrogate Legend
BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB
23VG39D12B	Method Blank	

Surrogate Legend
BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (70-130)
23VG39D12C	LCD	120
23VG39D12L	Lab Control Sample	117

Surrogate Legend
BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-44261-1

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)	XACOSAI (60-130)
380-44261-1	AIEA GULCH WELLS PUMP 2 (	76	86

Surrogate Legend

BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB	XACOSAI
23DSD033WB	Method Blank		

Surrogate Legend

BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
23DSD033WL	Lab Control Sample	66	90
23J5D033WL	Lab Control Sample	72	79
23J8D033WL	Lab Control Sample	97	80

Surrogate Legend

BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

QC Sample Results

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 380-38074/8
Matrix: Water
Analysis Batch: 38074

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	ug/L			04/26/23 13:29	1
1,1,1-Trichloroethane	ND		0.50	ug/L			04/26/23 13:29	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			04/26/23 13:29	1
1,1,2-Trichloroethane	ND		0.50	ug/L			04/26/23 13:29	1
1,1-Dichloroethane	ND		0.50	ug/L			04/26/23 13:29	1
1,1-Dichlorethylene	ND		0.50	ug/L			04/26/23 13:29	1
1,1-Dichloropropene	ND		0.50	ug/L			04/26/23 13:29	1
1,2,3-Trichlorobenzene	ND		0.50	ug/L			04/26/23 13:29	1
1,2,3-Trichloropropane	ND		0.50	ug/L			04/26/23 13:29	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			04/26/23 13:29	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			04/26/23 13:29	1
1,2-Dichloroethane	ND		0.50	ug/L			04/26/23 13:29	1
1,2-Dichloropropane	ND		0.50	ug/L			04/26/23 13:29	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			04/26/23 13:29	1
1,3-Dichloropropane	ND		0.50	ug/L			04/26/23 13:29	1
2,2-Dichloropropane	ND		0.50	ug/L			04/26/23 13:29	1
2-Butanone (MEK)	ND		5.0	ug/L			04/26/23 13:29	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			04/26/23 13:29	1
Acetone	ND		500	ug/L			04/26/23 13:29	1
Benzene	ND		0.50	ug/L			04/26/23 13:29	1
Bromobenzene	ND		0.50	ug/L			04/26/23 13:29	1
Bromochloromethane	ND		0.50	ug/L			04/26/23 13:29	1
Bromodichloromethane	ND		0.50	ug/L			04/26/23 13:29	1
Bromoform	ND		0.50	ug/L			04/26/23 13:29	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			04/26/23 13:29	1
Carbon disulfide	ND		0.50	ug/L			04/26/23 13:29	1
Carbon tetrachloride	ND		0.50	ug/L			04/26/23 13:29	1
Chlorobenzene	ND		0.50	ug/L			04/26/23 13:29	1
Chlorodibromomethane	ND		0.50	ug/L			04/26/23 13:29	1
Chloroethane	ND		0.50	ug/L			04/26/23 13:29	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			04/26/23 13:29	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			04/26/23 13:29	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			04/26/23 13:29	1
Dibromomethane	ND		0.50	ug/L			04/26/23 13:29	1
Dichlorodifluoromethane	ND		0.50	ug/L			04/26/23 13:29	1
Dichloromethane	ND		0.50	ug/L			04/26/23 13:29	1
Ethylbenzene	ND		0.50	ug/L			04/26/23 13:29	1
Hexachlorobutadiene	ND		0.50	ug/L			04/26/23 13:29	1
Isopropy benzene	ND		0.50	ug/L			04/26/23 13:29	1
m,p-Xylenes	ND		0.50	ug/L			04/26/23 13:29	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			04/26/23 13:29	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			04/26/23 13:29	1
Naphthalene	ND		0.50	ug/L			04/26/23 13:29	1
n-Butylbenzene	ND		0.50	ug/L			04/26/23 13:29	1
N-Propylbenzene	ND		0.50	ug/L			04/26/23 13:29	1
o-Chlorotoluene	ND		0.50	ug/L			04/26/23 13:29	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			04/26/23 13:29	1
o-Xylene	ND		0.50	ug/L			04/26/23 13:29	1

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QC Sample Results

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 380-38074/8
Matrix: Water
Analysis Batch: 38074

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
p-Chlorotoluene	ND		0.50	ug/L			04/26/23 13:29	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			04/26/23 13:29	1
p-Isopropyltoluene	ND		0.50	ug/L			04/26/23 13:29	1
sec-Butylbenzene	ND		0.50	ug/L			04/26/23 13:29	1
Styrene	ND		0.50	ug/L			04/26/23 13:29	1
Tert-amyl methyl ether	ND		3.0	ug/L			04/26/23 13:29	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			04/26/23 13:29	1
Tert-butyl ethyl ether	ND		3.0	ug/L			04/26/23 13:29	1
tert-Butylbenzene	ND		0.50	ug/L			04/26/23 13:29	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			04/26/23 13:29	1
Toluene	ND		0.50	ug/L			04/26/23 13:29	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			04/26/23 13:29	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			04/26/23 13:29	1
Trichloroethylene (TCE)	ND		0.50	ug/L			04/26/23 13:29	1
Bromoethane	ND		0.50	ug/L			04/26/23 13:29	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			04/26/23 13:29	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			04/26/23 13:29	1
Trichlorotrifluoroethane	ND		0.50	ug/L			04/26/23 13:29	1
Diisopropyl ether	ND		3.0	ug/L			04/26/23 13:29	1
Vinyl Chloride (VC)	ND		0.30	ug/L			04/26/23 13:29	1
Xylenes, Total	ND		0.50	ug/L			04/26/23 13:29	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	5.77	B	ug/L		5.76	109-99-9		04/26/23 13:29	1
Tentatively Identified Compound	None		ug/L			N/A		04/26/23 13:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		04/26/23 13:29	1
4-Bromofluorobenzene (Surr)	109		70 - 130		04/26/23 13:29	1
Toluene-d8 (Surr)	97		70 - 130		04/26/23 13:29	1

Lab Sample ID: LCS 380-38074/3
Matrix: Water
Analysis Batch: 38074

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	5.00	6.38		ug/L		128	70 - 130
1,1,1-Trichloroethane	5.00	4.98		ug/L		100	70 - 130
1,1,2,2-Tetrachloroethane	5.00	6.37		ug/L		127	70 - 130
1,1,2-Trichloroethane	5.00	5.75		ug/L		115	70 - 130
1,1-Dichloroethane	5.00	5.38		ug/L		108	70 - 130
1,1-Dichlorethylene	5.00	5.22		ug/L		104	70 - 130
1,1-Dichloropropene	5.00	5.09		ug/L		102	70 - 130
1,2,3-Trichlorobenzene	5.00	5.48		ug/L		110	70 - 130
1,2,3-Trichloropropane	5.00	6.05		ug/L		121	70 - 130
1,2,4-Trichlorobenzene	5.00	5.33		ug/L		107	70 - 130
1,2,4-Trimethy benzene	5.00	5.65		ug/L		113	70 - 130
1,2-Dichloroethane	5.00	5.35		ug/L		107	70 - 130

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QC Sample Results

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 380-38074/3

Matrix: Water

Analysis Batch: 38074

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloropropane	5.00	5.11		ug/L		102	70 - 130
1,3,5-Trimethy benzene	5.00	5.78		ug/L		116	70 - 130
1,3-Dichloropropane	5.00	5.65		ug/L		113	70 - 130
2,2-Dichloropropane	5.00	4.78		ug/L		96	70 - 130
2-Butanone (MEK)	50.0	52.8		ug/L		106	70 - 130
4-Methyl-2-pentanone (MIBK)	50.0	55.1		ug/L		110	70 - 130
Acetone	50.0	60.9	J	ug/L		122	70 - 130
Benzene	5.00	5.24		ug/L		105	70 - 130
Bromobenzene	5.00	5.57		ug/L		111	70 - 130
Bromochloromethane	5.00	5.27		ug/L		105	70 - 130
Bromodichloromethane	5.00	5.88		ug/L		118	70 - 130
Bromoform	5.00	6.44		ug/L		129	70 - 130
Bromomethane (Methyl Bromide)	5.00	5.15		ug/L		103	70 - 130
Carbon disulfide	5.00	6.19		ug/L		124	70 - 130
Carbon tetrachloride	5.00	5.70		ug/L		114	70 - 130
Chlorobenzene	5.00	5.47		ug/L		109	70 - 130
Chlorodibromomethane	5.00	6.13		ug/L		123	70 - 130
cis-1,3-Dichloropropene	5.00	5.37		ug/L		107	70 - 130
Dichloromethane	5.00	5.55		ug/L		111	70 - 130
Ethylbenzene	5.00	5.39		ug/L		108	70 - 130
Hexachlorobutadiene	5.00	5.25		ug/L		105	70 - 130
Isopropyl benzene	5.00	5.70		ug/L		114	70 - 130
m,p-Xylenes	10.0	11.2		ug/L		112	70 - 130
m-Dichlorobenzene (1,3-DCB)	5.00	5.90		ug/L		118	70 - 130
Methyl-tert-butyl Ether (MTBE)	5.00	5.19		ug/L		104	70 - 130
Naphthalene	5.00	5.22		ug/L		104	70 - 130
n-Butylbenzene	5.00	5.24		ug/L		105	70 - 130
N-Propylbenzene	5.00	5.32		ug/L		106	70 - 130
o-Chlorotoluene	5.00	5.97		ug/L		119	70 - 130
o-Dichlorobenzene (1,2-DCB)	5.00	5.45		ug/L		109	70 - 130
o-Xylene	5.00	5.33		ug/L		107	70 - 130
p-Chlorotoluene	5.00	5.52		ug/L		110	70 - 130
p-Dichlorobenzene (1,4-DCB)	5.00	5.92		ug/L		118	70 - 130
p-Isopropyltoluene	5.00	5.73		ug/L		115	70 - 130
sec-Butylbenzene	5.00	5.86		ug/L		117	70 - 130
Styrene	5.00	5.61		ug/L		112	70 - 130
Tert-amyl methyl ether	5.00	4.57		ug/L		91	70 - 130
1,3-Dichloropropene, Total	10.0	10.6		ug/L		106	70 - 130
Tert-butyl ethyl ether	5.00	5.00		ug/L		100	70 - 130
tert-Butylbenzene	5.00	5.62		ug/L		112	70 - 130
Tetrachloroethene (PCE)	5.00	5.37		ug/L		107	70 - 130
Toluene	5.00	5.33		ug/L		107	70 - 130
trans-1,2-Dichloroethylene	5.00	5.25		ug/L		105	70 - 130
trans-1,3-Dichloropropene	5.00	5.18		ug/L		104	70 - 130
Trichloroethylene (TCE)	5.00	5.18		ug/L		104	70 - 130
Bromoethane	5.00	5.49		ug/L		110	70 - 130
Trichlorofluoromethane (Freon 11)	5.00	5.53		ug/L		111	70 - 130
Trichlorotrifluoroethane	5.00	4.92		ug/L		98	70 - 130

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QC Sample Results

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 380-38074/3
Matrix: Water
Analysis Batch: 38074

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diisopropyl ether	5.00	5.54		ug/L		111	70 - 130
Vinyl Chloride (VC)	5.00	5.38		ug/L		108	70 - 130
Xylenes, Total	15.0	16.5		ug/L		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
4-Bromofluorobenzene (Surr)	102		70 - 130
Toluene-d8 (Surr)	102		70 - 130

Lab Sample ID: LCSD 380-38074/4
Matrix: Water
Analysis Batch: 38074

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
1,1,1,2-Tetrachloroethane	5.00	6.94	*+	ug/L		139	70 - 130	8	20
1,1,1-Trichloroethane	5.00	5.32		ug/L		106	70 - 130	7	20
1,1,2,2-Tetrachloroethane	5.00	6.59	*+	ug/L		132	70 - 130	3	20
1,1,2-Trichloroethane	5.00	6.11		ug/L		122	70 - 130	6	20
1,1-Dichloroethane	5.00	5.80		ug/L		116	70 - 130	8	20
1,1-Dichlorethylene	5.00	5.12		ug/L		102	70 - 130	2	20
1,1-Dichloropropene	5.00	5.64		ug/L		113	70 - 130	10	20
1,2,3-Trichlorobenzene	5.00	5.88		ug/L		118	70 - 130	7	20
1,2,3-Trichloropropane	5.00	6.67	*+	ug/L		133	70 - 130	10	20
1,2,4-Trichlorobenzene	5.00	5.73		ug/L		115	70 - 130	7	20
1,2,4-Trimethy benzene	5.00	6.06		ug/L		121	70 - 130	7	20
1,2-Dichloroethane	5.00	5.60		ug/L		112	70 - 130	5	20
1,2-Dichloropropane	5.00	5.60		ug/L		112	70 - 130	9	20
1,3,5-Trimethy benzene	5.00	6.12		ug/L		122	70 - 130	6	20
1,3-Dichloropropane	5.00	6.03		ug/L		121	70 - 130	7	20
2,2-Dichloropropane	5.00	4.94		ug/L		99	70 - 130	3	20
2-Butanone (MEK)	50.0	56.2		ug/L		112	70 - 130	6	20
4-Methyl-2-pentanone (MIBK)	50.0	59.3		ug/L		119	70 - 130	7	20
Acetone	50.0	68.7	J *+	ug/L		137	70 - 130	12	20
Benzene	5.00	5.67		ug/L		113	70 - 130	8	20
Bromobenzene	5.00	5.94		ug/L		119	70 - 130	6	20
Bromochloromethane	5.00	5.92		ug/L		118	70 - 130	12	20
Bromodichloromethane	5.00	6.58	*+	ug/L		132	70 - 130	11	20
Bromoform	5.00	6.61	*+	ug/L		132	70 - 130	3	20
Bromomethane (Methyl Bromide)	5.00	5.64		ug/L		113	70 - 130	9	20
Carbon disulfide	5.00	6.51		ug/L		130	70 - 130	5	20
Carbon tetrachloride	5.00	6.20		ug/L		124	70 - 130	8	20
Chlorobenzene	5.00	5.97		ug/L		119	70 - 130	9	20
Chlorodibromomethane	5.00	6.47		ug/L		129	70 - 130	5	20
cis-1,3-Dichloropropene	5.00	5.79		ug/L		116	70 - 130	7	20
Dichloromethane	5.00	5.60		ug/L		112	70 - 130	1	20
Ethylbenzene	5.00	5.87		ug/L		117	70 - 130	9	20
Hexachlorobutadiene	5.00	5.80		ug/L		116	70 - 130	10	20
Isopropy benzene	5.00	6.02		ug/L		120	70 - 130	5	20

QC Sample Results

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 380-38074/4
Matrix: Water
Analysis Batch: 38074

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
m,p-Xylenes	10.0	12.2		ug/L		122	70 - 130	8	20
m-Dichlorobenzene (1,3-DCB)	5.00	6.20		ug/L		124	70 - 130	5	20
Methyl-tert-butyl Ether (MTBE)	5.00	5.58		ug/L		112	70 - 130	7	20
Naphthalene	5.00	5.70		ug/L		114	70 - 130	9	20
n-Butylbenzene	5.00	5.79		ug/L		116	70 - 130	10	20
N-Propylbenzene	5.00	5.77		ug/L		115	70 - 130	8	20
o-Chlorotoluene	5.00	6.26		ug/L		125	70 - 130	5	20
o-Dichlorobenzene (1,2-DCB)	5.00	5.95		ug/L		119	70 - 130	9	20
o-Xylene	5.00	5.81		ug/L		116	70 - 130	9	20
p-Chlorotoluene	5.00	6.09		ug/L		122	70 - 130	10	20
p-Dichlorobenzene (1,4-DCB)	5.00	6.20		ug/L		124	70 - 130	5	20
p-Isopropyltoluene	5.00	6.09		ug/L		122	70 - 130	6	20
sec-Butylbenzene	5.00	6.24		ug/L		125	70 - 130	6	20
Styrene	5.00	5.96		ug/L		119	70 - 130	6	20
Tert-amyl methyl ether	5.00	4.92		ug/L		98	70 - 130	7	20
1,3-Dichloropropene, Total	10.0	11.3		ug/L		113	70 - 130	7	20
Tert-butyl ethyl ether	5.00	5.28		ug/L		106	70 - 130	6	20
tert-Butylbenzene	5.00	5.93		ug/L		119	70 - 130	5	20
Tetrachloroethene (PCE)	5.00	5.88		ug/L		118	70 - 130	9	20
Toluene	5.00	5.75		ug/L		115	70 - 130	8	20
trans-1,2-Dichloroethylene	5.00	5.61		ug/L		112	70 - 130	7	20
trans-1,3-Dichloropropene	5.00	5.49		ug/L		110	70 - 130	6	20
Trichloroethylene (TCE)	5.00	5.53		ug/L		111	70 - 130	6	20
Bromoethane	5.00	5.52		ug/L		110	70 - 130	1	20
Trichlorofluoromethane (Freon 11)	5.00	6.10		ug/L		122	70 - 130	10	20
Trichlorotrifluoroethane	5.00	5.32		ug/L		106	70 - 130	8	20
Diisopropyl ether	5.00	6.02		ug/L		120	70 - 130	8	20
Vinyl Chloride (VC)	5.00	5.82		ug/L		116	70 - 130	8	20
Xylenes, Total	15.0	18.0		ug/L		120	70 - 130	8	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	101		70 - 130
Toluene-d8 (Surr)	100		70 - 130

Lab Sample ID: MRL 380-38074/6
Matrix: Water
Analysis Batch: 38074

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
m,p-Xylenes	0.500	0.520		ug/L		104	50 - 150
Vinyl Chloride (VC)	0.250	0.315		ug/L		126	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 130
4-Bromofluorobenzene (Surr)	103		70 - 130
Toluene-d8 (Surr)	97		70 - 130

QC Sample Results

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MRL 380-38074/7
Matrix: Water
Analysis Batch: 38074

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	0.500	0.558		ug/L		112	50 - 150
1,1,1-Trichloroethane	0.500	0.505		ug/L		101	50 - 150
1,1,2,2-Tetrachloroethane	0.500	0.676		ug/L		135	50 - 150
1,1,2-Trichloroethane	0.500	0.581		ug/L		116	50 - 150
1,1-Dichloroethane	0.500	0.609		ug/L		122	50 - 150
1,1-Dichlorethylene	0.500	0.515		ug/L		103	50 - 150
1,1-Dichloropropene	0.500	0.528		ug/L		106	50 - 150
1,2,3-Trichlorobenzene	0.500	0.569		ug/L		114	50 - 150
1,2,3-Trichloropropane	0.500	0.642		ug/L		128	50 - 150
1,2,4-Trichlorobenzene	0.500	0.533		ug/L		107	50 - 150
1,2,4-Trimethy benzene	0.500	0.511		ug/L		102	50 - 150
1,2-Dichloroethane	0.500	0.582		ug/L		116	50 - 150
1,2-Dichloropropane	0.500	0.579		ug/L		116	50 - 150
1,3,5-Trimethy benzene	0.500	0.516		ug/L		103	50 - 150
1,3-Dichloropropane	0.500	0.541		ug/L		108	50 - 150
2,2-Dichloropropane	0.500	0.507		ug/L		101	50 - 150
2-Butanone (MEK)	5.00	7.52		ug/L		150	50 - 150
4-Methyl-2-pentanone (MIBK)	5.00	4.95	J	ug/L		99	50 - 150
Acetone	5.00	9.38	J ^3+	ug/L		188	50 - 150
Benzene	0.500	0.559		ug/L		112	50 - 150
Bromobenzene	0.500	0.584		ug/L		117	50 - 150
Bromochloromethane	0.500	0.603		ug/L		121	50 - 150
Bromodichloromethane	0.500	0.610		ug/L		122	50 - 150
Bromoform	0.500	0.589		ug/L		118	50 - 150
Bromomethane (Methyl Bromide)	0.500	0.567		ug/L		113	50 - 150
Carbon disulfide	0.500	0.600		ug/L		120	50 - 150
Carbon tetrachloride	0.500	0.535		ug/L		107	50 - 150
Chlorobenzene	0.500	0.575		ug/L		115	50 - 150
Chlorodibromomethane	0.500	0.714		ug/L		143	50 - 150
cis-1,3-Dichloropropene	0.500	0.512		ug/L		102	50 - 150
Dichloromethane	0.500	0.630		ug/L		126	50 - 150
Ethylbenzene	0.500	0.495	J	ug/L		99	50 - 150
Hexachlorobutadiene	0.500	0.556		ug/L		111	50 - 150
Isopropyl benzene	0.500	0.533		ug/L		107	50 - 150
m,p-Xylenes	1.00	0.986		ug/L		99	50 - 150
m-Dichlorobenzene (1,3-DCB)	0.500	0.617		ug/L		123	50 - 150
Methyl-tert-butyl Ether (MTBE)	0.500	0.553		ug/L		111	50 - 150
Naphthalene	0.500	ND	^3-	ug/L		0	50 - 150
n-Butylbenzene	0.500	0.508		ug/L		102	50 - 150
N-Propylbenzene	0.500	0.500		ug/L		100	50 - 150
o-Chlorotoluene	0.500	0.599		ug/L		120	50 - 150
o-Dichlorobenzene (1,2-DCB)	0.500	0.579		ug/L		116	50 - 150
o-Xylene	0.500	0.479	J	ug/L		96	50 - 150
p-Chlorotoluene	0.500	0.476	J	ug/L		95	50 - 150
p-Dichlorobenzene (1,4-DCB)	0.500	0.591		ug/L		118	50 - 150
p-Isopropyltoluene	0.500	0.495	J	ug/L		99	50 - 150
sec-Butylbenzene	0.500	0.519		ug/L		104	50 - 150
Styrene	0.500	0.482	J	ug/L		96	50 - 150

QC Sample Results

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MRL 380-38074/7
Matrix: Water
Analysis Batch: 38074

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Tert-amyl methyl ether	0.500	0.496	J	ug/L		99	50 - 150
1,3-Dichloropropene, Total	1.00	1.10		ug/L		110	50 - 150
Tert-butyl ethyl ether	0.500	0.541	J	ug/L		108	50 - 150
tert-Butylbenzene	0.500	0.518		ug/L		104	50 - 150
Tetrachloroethene (PCE)	0.500	0.587		ug/L		117	50 - 150
Toluene	0.500	0.551		ug/L		110	50 - 150
trans-1,2-Dichloroethylene	0.500	0.652		ug/L		130	50 - 150
trans-1,3-Dichloropropene	0.500	0.592		ug/L		118	50 - 150
Trichloroethylene (TCE)	0.500	0.566		ug/L		113	50 - 150
Bromoethane	0.500	0.605		ug/L		121	50 - 150
Trichlorofluoromethane (Freon 11)	0.500	0.542		ug/L		108	50 - 150
Trichlorotrifluoroethane	0.500	0.594		ug/L		119	50 - 150
Diisopropyl ether	0.500	0.674	J	ug/L		135	50 - 150
Vinyl Chloride (VC)	0.500	0.519		ug/L		104	50 - 150
Xylenes, Total	1.50	1.46		ug/L		98	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
4-Bromofluorobenzene (Surr)	106		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Method: 524.2 - Volatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 380-38220/5
Matrix: Water
Analysis Batch: 38220

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tertiary Butyl Alcohol (TBA)	ND		2.0	ug/L			04/27/23 17:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		04/27/23 17:20	1
4-Bromofluorobenzene (Surr)	93		70 - 130		04/27/23 17:20	1
1,2-Dichloroethane-d4 (Surr)	105		70 - 130		04/27/23 17:20	1

Lab Sample ID: LCS 380-38220/2
Matrix: Water
Analysis Batch: 38220

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Tertiary Butyl Alcohol (TBA)	5.00	6.25		ug/L		125	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130
1,2-Dichloroethane-d4 (Surr)	102		70 - 130

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QC Sample Results

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

Job ID: 380-44261-1

Method: 524.2 - Volatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 380-38220/3
Matrix: Water
Analysis Batch: 38220

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
Tertiary Butyl Alcohol (TBA)	5.00	6.11		ug/L		122	70 - 130	2	20
LCSD LCSD									
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	99		70 - 130						
4-Bromofluorobenzene (Surr)	100		70 - 130						
1,2-Dichloroethane-d4 (Surr)	101		70 - 130						

Lab Sample ID: MRL 380-38220/4
Matrix: Water
Analysis Batch: 38220

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Tertiary Butyl Alcohol (TBA)	2.00	2.29		ug/L		115	50 - 150		
MRL MRL									
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	98		50 - 150						
4-Bromofluorobenzene (Surr)	97		50 - 150						
1,2-Dichloroethane-d4 (Surr)	104		50 - 150						

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

Lab Sample ID: LLCS 810-57237/3-A
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57237

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Atachlor	0.0976	0.0932		ug/L		96	50 - 150		
Aldrin	0.0683	0.0586		ug/L		86	50 - 150		
Dieldrin	0.0195	0.0282		ug/L		144	50 - 150		
Endrin	0.00976	0.0108		ug/L		110	50 - 150		
Heptachlor	0.00976	0.0137		ug/L		140	50 - 150		
Heptachlor epoxide	0.00976	0.00999		ug/L		102	50 - 150		
Methoxychlor	0.0976	0.0701		ug/L		72	50 - 150		
gamma-BHC (Lindane)	0.0195	0.0213		ug/L		109	50 - 150		
Butachlor	0.0976	0.0888		ug/L		91	50 - 150		
Di(2-ethylhexyl)adipate	0.585	0.534	J	ug/L		91	50 - 150		
Di (2-ethylhexyl)phthalate	0.585	0.683		ug/L		117	50 - 150		
Hexachlorobenzene	0.0976	0.0882		ug/L		90	50 - 150		
Hexachlorocyclopentadiene	0.0976	0.0612		ug/L		63	50 - 150		
Metolachlor	0.0976	0.0937		ug/L		96	50 - 150		
Propachlor	0.0976	0.0847		ug/L		87	50 - 150		
Simazine	0.0683	0.0679		ug/L		99	50 - 150		
LLCS LLCS									
Surrogate	%Recovery	Qualifier	Limits						
2-Nitro-m-xylene (Surr)	98		70 - 130						
Perylene-d12 (Surr)	100		70 - 130						
Triphenylphosphate (Surr)	107		70 - 130						

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: MB 810-57414/1-A
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 57414

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alachlor	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Benzo[a]anthracene	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Aldrin	ND		0.010	ug/L		05/02/23 08:16	05/02/23 23:52	1
Benzo[b]fluoranthene	ND		0.020	ug/L		05/02/23 08:16	05/02/23 23:52	1
Benzo[k]fluoranthene	ND		0.020	ug/L		05/02/23 08:16	05/02/23 23:52	1
Dieldrin	ND		0.010	ug/L		05/02/23 08:16	05/02/23 23:52	1
Benzo[a]pyrene	ND		0.020	ug/L		05/02/23 08:16	05/02/23 23:52	1
Endrin	ND		0.010	ug/L		05/02/23 08:16	05/02/23 23:52	1
Benzo[g,h,i]perylene	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Heptachlor	ND		0.010	ug/L		05/02/23 08:16	05/02/23 23:52	1
Butylbenzylphthalate	ND		0.50	ug/L		05/02/23 08:16	05/02/23 23:52	1
Heptachlor epoxide	ND		0.010	ug/L		05/02/23 08:16	05/02/23 23:52	1
Methoxychlor	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
gamma-BHC (Lindane)	ND		0.010	ug/L		05/02/23 08:16	05/02/23 23:52	1
Acenaphthylene	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Atrazine	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Chlorobenzilate	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
trans-Nonachlor	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
alpha-Chlordane	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
gamma-Chlordane	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Butachlor	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Bromacil	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Chlorothalonil	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Chlorpyrifos	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
4,4'-DDD	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
4,4'-DDT	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Di-n-butyl phthalate	0.186	B	0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Dichlorvos	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Diethylphthalate	ND		0.50	ug/L		05/02/23 08:16	05/02/23 23:52	1
Di(2-ethylhexyl)adipate	ND		0.60	ug/L		05/02/23 08:16	05/02/23 23:52	1
Di (2-ethylhexyl)phthalate	ND		0.60	ug/L		05/02/23 08:16	05/02/23 23:52	1
Dimethylphthalate	ND		0.50	ug/L		05/02/23 08:16	05/02/23 23:52	1
Endosulfan I	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Endosulfan II	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Endosulfan sulfate	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Endrin aldehyde	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Hexachlorobenzene	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
alpha-BHC	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
beta-BHC	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
delta-BHC	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Hexachlorocyclopentadiene	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Indeno[1,2,3-cd]pyrene	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Isophorone	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Metolachlor	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Molinate	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Propachlor	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Simazine	ND		0.050	ug/L		05/02/23 08:16	05/02/23 23:52	1
Terbacil	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: MB 810-57414/1-A
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 57414

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trifluralin	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Chloroneb	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Fluoranthene	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Thiobencarb	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Parathion	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Di-n-octyl phthalate	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Malathion	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Pendimethalin	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1
Terbuthylazine	ND		0.10	ug/L		05/02/23 08:16	05/02/23 23:52	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	0.650	T J	ug/L		3.30	N/A	05/02/23 08:16	05/02/23 23:52	1
Heptadecane	2.82	T J N	ug/L		3.95	629-78-7	05/02/23 08:16	05/02/23 23:52	1
Unknown	1.59	T J	ug/L		15.44	N/A	05/02/23 08:16	05/02/23 23:52	1
9-Octadecenamide, (Z)-	0.675	T J N	ug/L		16.57	301-02-0	05/02/23 08:16	05/02/23 23:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene (Surr)	102		70 - 130	05/02/23 08:16	05/02/23 23:52	1
Perylene-d12 (Surr)	101		70 - 130	05/02/23 08:16	05/02/23 23:52	1
Triphenylphosphate (Surr)	109		70 - 130	05/02/23 08:16	05/02/23 23:52	1

Lab Sample ID: LCS 810-57414/3-A
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57414

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alachlor	1.95	2.11		ug/L		108	70 - 130
Aldrin	1.95	1.92		ug/L		98	70 - 130
Dieldrin	1.95	2.04		ug/L		105	70 - 130
Endrin	1.95	2.14		ug/L		110	70 - 130
Heptachlor	1.95	1.98		ug/L		101	70 - 130
Heptachlor epoxide	1.95	2.18		ug/L		112	70 - 130
Methoxychlor	1.95	1.96		ug/L		100	70 - 130
gamma-BHC (Lindane)	1.95	2.09		ug/L		107	70 - 130
Chlorobenzilate	1.95	2.00		ug/L		103	70 - 130
trans-Nonachlor	1.95	2.00		ug/L		102	70 - 130
alpha-Chlordane	1.95	2.05		ug/L		105	70 - 130
gamma-Chlordane	1.95	2.20		ug/L		113	70 - 130
Butachlor	1.95	2.23		ug/L		114	70 - 130
Bromacil	1.95	1.92		ug/L		98	70 - 130
Chlorothalonil	1.95	2.19		ug/L		112	70 - 130
Chlorpyrifos	1.95	1.95		ug/L		100	70 - 130
4,4'-DDD	1.95	2.04		ug/L		104	70 - 130
4,4'-DDT	1.95	2.11		ug/L		108	70 - 130
Di-n-butyl phthalate	1.95	2.21		ug/L		113	70 - 130
Dichlorvos	1.95	1.90		ug/L		97	70 - 130
Diethylphthalate	1.95	2.12		ug/L		109	70 - 130
Di(2-ethylhexyl)adipate	1.95	1.90		ug/L		97	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: LCS 810-57414/3-A
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57414

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Di (2-ethylhexyl)phthalate	1.95	1.87		ug/L		95	70 - 130
Dimethylphthalate	1.95	1.98		ug/L		101	70 - 130
Endosulfan I	1.95	1.91		ug/L		98	70 - 130
Endosulfan II	1.95	2.00		ug/L		102	70 - 130
Endosulfan sulfate	1.95	2.10		ug/L		108	70 - 130
Endrin aldehyde	1.95	1.82		ug/L		93	64 - 125
Hexachlorobenzene	1.95	2.02		ug/L		104	70 - 130
alpha-BHC	1.95	1.97		ug/L		101	70 - 130
beta-BHC	1.95	1.98		ug/L		101	70 - 130
delta-BHC	1.95	1.93		ug/L		98	70 - 130
Hexachlorocyclopentadiene	1.95	1.69		ug/L		86	70 - 130
Indeno[1,2,3-cd]pyrene	1.95	2.03		ug/L		104	70 - 130
Isophorone	1.95	2.01		ug/L		103	70 - 130
Metolachlor	1.95	2.18		ug/L		112	70 - 130
Molinate	1.95	2.02		ug/L		103	70 - 130
Propachlor	1.95	2.07		ug/L		106	70 - 130
Simazine	1.95	1.97		ug/L		101	70 - 130
Terbacil	1.95	1.86		ug/L		95	70 - 130
Trifluralin	1.95	2.19		ug/L		112	70 - 130
Chloroneb	1.95	2.31		ug/L		118	70 - 130
Fluoranthene	1.95	2.29		ug/L		117	70 - 130
Thiobencarb	1.95	2.13		ug/L		109	70 - 130
Parathion	1.95	2.06		ug/L		105	80 - 134
Di-n-octyl phthalate	1.95	1.80		ug/L		92	60 - 122
Malathion	1.95	2.04		ug/L		104	80 - 134
Pendimethalin	1.95	2.13		ug/L		109	65 - 122
Terbutylazine	1.95	2.12		ug/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene (Surr)	104		70 - 130
Perylene-d12 (Surr)	103		70 - 130
Triphenylphosphate (Surr)	108		70 - 130

Lab Sample ID: LLCS 810-57414/2-A
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57414

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Alachlor	0.00990	0.0161	J *+	ug/L		162	50 - 150
Aldrin	0.00990	0.0112		ug/L		113	50 - 150
Dieldrin	0.00990	0.0133		ug/L		135	50 - 150
Endrin	0.00990	0.0117		ug/L		118	50 - 150
Heptachlor	0.00990	0.0143		ug/L		145	50 - 150
Heptachlor epoxide	0.00990	0.00956	J	ug/L		97	50 - 150
Methoxychlor	0.00990	0.0136	J	ug/L		137	50 - 150
gamma-BHC (Lindane)	0.00990	0.0112		ug/L		113	50 - 150
Chlorobenzilate	0.00990	ND	*+	ug/L		178	50 - 150
trans-Nonachlor	0.00990	ND		ug/L		104	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: LLCS 810-57414/2-A
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57414

Analyte	Spike Added	LLCS	LLCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
alpha-Chlordane	0.00990	ND		ug/L		97	50 - 150
gamma-Chlordane	0.00990	ND		ug/L		113	50 - 150
Butachlor	0.00990	ND	*+	ug/L		167	50 - 150
Bromacil	0.00990	ND	*+	ug/L		189	50 - 150
Chlorothalonil	0.00990	ND	*+	ug/L		152	50 - 150
Chlorpyrifos	0.00990	ND		ug/L		118	50 - 150
4,4'-DDD	0.00990	ND		ug/L		99	50 - 150
4,4'-DDT	0.00990	ND		ug/L		136	50 - 150
Di-n-butyl phthalate	0.00990	0.135	*+	ug/L		1367	50 - 150
Dichlorvos	0.00990	0.0119	J	ug/L		120	50 - 150
Diethylphthalate	0.00990	ND	*+	ug/L		187	50 - 150
Di(2-ethylhexyl)adipate	0.00990	ND	*+	ug/L		173	50 - 150
Di (2-ethylhexyl)phthalate	0.00990	ND	*+	ug/L		598	50 - 150
Dimethylphthalate	0.00990	ND	*+	ug/L		192	50 - 150
Endosulfan I	0.00990	ND	*-	ug/L		0	50 - 150
Endosulfan II	0.00990	ND	*-	ug/L		0	50 - 150
Endosulfan sulfate	0.00990	ND		ug/L		138	50 - 150
Endrin aldehyde	0.00990	ND		ug/L		147	50 - 150
Hexachlorobenzene	0.00990	0.0104	J	ug/L		105	50 - 150
alpha-BHC	0.00990	0.0144	J	ug/L		146	50 - 150
beta-BHC	0.00990	ND		ug/L		86	50 - 150
delta-BHC	0.00990	0.0113	J	ug/L		114	50 - 150
Hexachlorocyclopentadiene	0.00990	ND		ug/L		76	50 - 150
Indeno[1,2,3-cd]pyrene	0.00990	ND		ug/L		100	50 - 150
Isophorone	0.00990	0.0248	J *+	ug/L		251	50 - 150
Metolachlor	0.00990	0.0143	J	ug/L		145	50 - 150
Molinate	0.00990	ND		ug/L		115	50 - 150
Propachlor	0.00990	0.0116	J	ug/L		117	50 - 150
Simazine	0.00990	ND	*+	ug/L		211	50 - 150
Terbacil	0.00990	0.0240	J *+	ug/L		242	50 - 150
Trifluralin	0.00990	ND	*+	ug/L		159	50 - 150
Chloroneb	0.00990	ND	*-	ug/L		0	50 - 150
Fluoranthene	0.00990	0.0114	J	ug/L		115	50 - 150
Thiobencarb	0.00990	0.0115	J	ug/L		116	50 - 150
Parathion	0.00990	ND	*-	ug/L		0	50 - 150
Di-n-octyl phthalate	0.00990	0.0222	J *+	ug/L		224	50 - 150
Malathion	0.00990	ND	*-	ug/L		0	50 - 150
Pendimethalin	0.00990	0.0267	J *+	ug/L		270	50 - 150
Terbutylazine	0.00990	0.0116	J	ug/L		117	50 - 150

Surrogate	LLCS LLCS		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene (Surr)	99		70 - 130
Perylene-d12 (Surr)	95		70 - 130
Triphenylphosphate (Surr)	103		70 - 130

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: 810-61248-O-5-A MS
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 57414

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Alachlor	ND		1.95	2.26		ug/L		116	70 - 130
Aldrin	ND		1.95	1.94		ug/L		100	70 - 130
Dieldrin	ND		1.95	2.06		ug/L		106	70 - 130
Endrin	ND		1.95	2.10		ug/L		108	70 - 130
Heptachlor	ND		1.95	2.04		ug/L		105	70 - 130
Heptachlor epoxide	ND		1.95	2.25		ug/L		116	70 - 130
Methoxychlor	ND		1.95	2.05		ug/L		106	70 - 130
gamma-BHC (Lindane)	ND		1.95	2.15		ug/L		111	70 - 130
Chlorobenzilate	ND		1.95	2.06		ug/L		106	70 - 130
trans-Nonachlor	ND		1.95	2.17		ug/L		112	70 - 130
alpha-Chlordane	ND		1.95	2.16		ug/L		111	70 - 130
gamma-Chlordane	ND		1.95	2.28		ug/L		117	70 - 130
Butachlor	ND		1.95	2.33		ug/L		120	70 - 130
Bromacil	ND		1.95	2.19		ug/L		112	70 - 130
Chlorothalonil	ND		1.95	2.07		ug/L		106	70 - 130
Chlorpyrifos	ND		1.95	2.03		ug/L		105	70 - 130
4,4'-DDD	ND		1.95	2.08		ug/L		107	70 - 130
4,4'-DDT	ND		1.95	2.13		ug/L		109	70 - 130
Di-n-butyl phthalate	ND	B	1.95	2.26		ug/L		116	70 - 130
Dichlorvos	ND		1.95	1.98		ug/L		102	70 - 130
Diethylphthalate	ND		1.95	2.10		ug/L		108	70 - 130
Di(2-ethylhexyl)adipate	ND		1.95	1.97		ug/L		101	70 - 130
Di (2-ethylhexyl)phthalate	ND		1.95	1.88		ug/L		96	70 - 130
Dimethylphthalate	ND		1.95	2.07		ug/L		106	70 - 130
Endosulfan I	ND		1.95	2.06		ug/L		106	70 - 130
Endosulfan II	ND		1.95	2.03		ug/L		104	70 - 130
Endosulfan sulfate	ND		1.95	2.25		ug/L		116	70 - 130
Endrin aldehyde	ND		1.95	1.74		ug/L		89	64 - 125
Hexachlorobenzene	ND		1.95	2.03		ug/L		104	70 - 130
alpha-BHC	ND		1.95	2.02		ug/L		104	70 - 130
beta-BHC	ND		1.95	2.02		ug/L		104	70 - 130
delta-BHC	ND		1.95	1.91		ug/L		98	70 - 130
Hexachlorocyclopentadiene	ND		1.95	1.67		ug/L		86	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.95	2.03		ug/L		104	70 - 130
Isophorone	ND		1.95	1.96		ug/L		101	70 - 130
Metolachlor	ND		1.95	2.26		ug/L		116	70 - 130
Molinate	ND		1.95	2.04		ug/L		105	70 - 130
Propachlor	ND		1.95	2.09		ug/L		108	70 - 130
Simazine	ND		1.95	2.08		ug/L		107	70 - 130
Terbacil	ND		1.95	1.95		ug/L		100	70 - 130
Trifluralin	ND		1.95	2.17		ug/L		112	70 - 130
Chloroneb	ND		1.95	2.27		ug/L		116	70 - 130
Fluoranthene	ND		1.95	2.30		ug/L		118	70 - 130
Thiobencarb	ND		1.95	2.19		ug/L		113	70 - 130
Parathion	ND		1.95	2.11		ug/L		109	80 - 134
Di-n-octyl phthalate	ND		1.95	1.87		ug/L		96	60 - 122
Malathion	ND		1.95	2.11		ug/L		108	80 - 134
Pendimethalin	ND		1.95	2.28		ug/L		117	65 - 122

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: 810-61248-O-5-A MS
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 57414

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Terbutylazine	ND		1.95	2.22		ug/L		114	70 - 130
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
2-Nitro-m-xylene (Surr)	103		70 - 130						
Perylene-d12 (Surr)	103		70 - 130						
Triphenylphosphate (Surr)	117		70 - 130						

Lab Sample ID: 860-47346-B-1-A DU
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 57414

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alachlor	ND		ND		ug/L		NC	15
Benzo[a]anthracene	ND		ND		ug/L		NC	14
Aldrin	ND		ND		ug/L		NC	18
Benzo[b]fluoranthene	ND		ND		ug/L		NC	20
Benzo[k]fluoranthene	ND		ND		ug/L		NC	20
Dieldrin	ND		ND		ug/L		NC	19
Benzo[a]pyrene	ND		ND		ug/L		NC	26
Endrin	ND		ND		ug/L		NC	18
Benzo[g,h,i]perylene	ND		ND		ug/L		NC	14
Heptachlor	ND		ND		ug/L		NC	15
Butylbenzylphthalate	ND		ND		ug/L		NC	23
Heptachlor epoxide	ND		ND		ug/L		NC	14
Methoxychlor	ND		ND		ug/L		NC	14
gamma-BHC (Lindane)	ND		ND		ug/L		NC	13
Acenaphthylene	ND		ND		ug/L		NC	34
Atrazine	ND		ND		ug/L		NC	17
Chlorobenzilate	ND		ND		ug/L		NC	30
trans-Nonachlor	ND		ND		ug/L		NC	17
alpha-Chlordane	ND		ND		ug/L		NC	15
gamma-Chlordane	ND		ND		ug/L		NC	16
Butachlor	ND		ND		ug/L		NC	15
Bromacil	ND		ND		ug/L		NC	20
Chlorothalonil	ND		ND		ug/L		NC	15
Chlorpyrifos	ND		ND		ug/L		NC	30
4,4'-DDD	ND		ND		ug/L		NC	17
4,4'-DDT	ND		ND		ug/L		NC	19
Di-n-butyl phthalate	ND	B	ND	B	ug/L		NC	20
Dichlorvos	ND		ND		ug/L		NC	30
Diethylphthalate	ND		ND		ug/L		NC	21
Di(2-ethylhexyl)adipate	ND		ND		ug/L		NC	16
Di (2-ethylhexyl)phthalate	ND		ND		ug/L		NC	18
Dimethylphthalate	ND		ND		ug/L		NC	20
Endosulfan I	ND		ND		ug/L		NC	30
Endosulfan II	ND		ND		ug/L		NC	30
Endosulfan sulfate	ND		ND		ug/L		NC	30
Endrin aldehyde	ND		ND		ug/L		NC	30

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: 860-47346-B-1-A DU
Matrix: Water
Analysis Batch: 57529

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 57414

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Hexachlorobenzene	ND		ND		ug/L		NC	14
alpha-BHC	ND		ND		ug/L		NC	30
beta-BHC	ND		ND		ug/L		NC	30
delta-BHC	ND		ND		ug/L		NC	30
Hexachlorocyclopentadiene	ND		ND		ug/L		NC	29
Indeno[1,2,3-cd]pyrene	ND		ND		ug/L		NC	25
Isophorone	ND		ND		ug/L		NC	44
Metolachlor	ND		ND		ug/L		NC	14
Molinate	ND		ND		ug/L		NC	16
Propachlor	ND		ND		ug/L		NC	12
Simazine	ND		ND		ug/L		NC	21
Terbacil	ND		ND		ug/L		NC	22
Trifluralin	ND		ND		ug/L		NC	19
Chloroneb	ND		ND		ug/L		NC	30
Fluoranthene	ND		ND		ug/L		NC	13
Thiobencarb	ND		ND		ug/L		NC	11
Parathion	ND		ND		ug/L		NC	20
Di-n-octyl phthalate	ND		ND		ug/L		NC	20
Malathion	ND		ND		ug/L		NC	20
Pendimethalin	ND		ND		ug/L		NC	30
Terbutylazine	ND		ND		ug/L		NC	30

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene (Surr)	98		70 - 130
Perylene-d12 (Surr)	100		70 - 130
Triphenylphosphate (Surr)	111		70 - 130

Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

Lab Sample ID: MBL 380-37791/4-A
Matrix: Water
Analysis Batch: 38045

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37791

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1,2,3-Trichloropropane	ND		0.040	ug/L		04/25/23 13:05	04/25/23 18:05	1
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		04/25/23 13:05	04/25/23 18:05	1
1,2-D bromoethane	ND		0.010	ug/L		04/25/23 13:05	04/25/23 18:05	1

Surrogate	MBL	MBL	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dibromopropane (Surr)	103		60 - 140	04/25/23 13:05	04/25/23 18:05	1

Lab Sample ID: LCS 380-37791/3-A
Matrix: Water
Analysis Batch: 38045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37791

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-D bromo-3-Chloropropane	0.200	0.191		ug/L		95	70 - 130

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QC Sample Results

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

Job ID: 380-44261-1

Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 380-37791/3-A
Matrix: Water
Analysis Batch: 38045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37791

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-D bromoethane	0.200	0.197		ug/L		99	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dibromopropane (Surr)	97		60 - 140				

Lab Sample ID: MRL 380-37791/1-A
Matrix: Water
Analysis Batch: 38045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37791

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	0.0400	0.0520		ug/L		130	60 - 140
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
1,2-Dibromopropane (Surr)	99		60 - 140				

Lab Sample ID: MRL 380-37791/2-A
Matrix: Water
Analysis Batch: 38045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37791

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	0.0500	0.0612		ug/L		122	60 - 140
1,2-D bromo-3-Chloropropane	0.0100	0.0117		ug/L		117	60 - 140
1,2-D bromoethane	0.0100	0.00859	J	ug/L		86	60 - 140
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
1,2-Dibromopropane (Surr)	108		60 - 140				

Lab Sample ID: 380-44167-T-1-A MS
Matrix: Water
Analysis Batch: 38045

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37791

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	ND		1.24	1.37		ug/L		110	65 - 135
1,2-D bromo-3-Chloropropane	ND		0.248	0.252		ug/L		102	65 - 135
1,2-D bromoethane	ND		0.248	0.251		ug/L		101	65 - 135
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dibromopropane (Surr)	107		60 - 140						

Lab Sample ID: 380-44182-I-1-A DU
Matrix: Water
Analysis Batch: 38045

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 37791

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
1,2,3-Trichloropropane	ND		ND		ug/L		NC	20
1,2-D bromo-3-Chloropropane	ND		ND		ug/L		NC	20
1,2-D bromoethane	ND		ND		ug/L		NC	20

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QC Sample Results

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

Job ID: 380-44261-1

Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: 380-44182-I-1-A DU
Matrix: Water
Analysis Batch: 38045

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 37791

Surrogate	%Recovery	DU DU Qualifier	Limits
1,2-Dibromopropane (Surr)	93		60 - 140

Method: 505 - Organochlorine Pesticides/PCBs (GC)

Lab Sample ID: MB 810-57403/1-A
Matrix: Water
Analysis Batch: 57488

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 57403

Analyte	MB MB Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND *3	0.080	ug/L		05/02/23 09:25	05/03/23 04:28	1
PCB-1221	ND *3	0.10	ug/L		05/02/23 09:25	05/03/23 04:28	1
PCB-1232	ND *3	0.10	ug/L		05/02/23 09:25	05/03/23 04:28	1
PCB-1242	ND *3	0.10	ug/L		05/02/23 09:25	05/03/23 04:28	1
PCB-1248	ND *3	0.10	ug/L		05/02/23 09:25	05/03/23 04:28	1
PCB-1254	ND *3	0.10	ug/L		05/02/23 09:25	05/03/23 04:28	1
PCB-1260	ND *3	0.10	ug/L		05/02/23 09:25	05/03/23 04:28	1
Chlordane (technical)	ND *3	0.10	ug/L		05/02/23 09:25	05/03/23 04:28	1
Toxaphene	ND *3	0.50	ug/L		05/02/23 09:25	05/03/23 04:28	1
Total PCBs as DCB (Qualitative)	ND	0.10	ug/L		05/02/23 09:25	05/03/23 04:28	1
Polychlorinated biphenyls, Total	ND	0.10	ug/L		05/02/23 09:25	05/03/23 04:28	1

Lab Sample ID: LLCS 810-57403/2-A
Matrix: Water
Analysis Batch: 57488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57403

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlordane (technical)	0.100	0.0836	J *3	ug/L		84	50 - 150

Lab Sample ID: LLCS 810-57403/3-A
Matrix: Water
Analysis Batch: 57488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 57403

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Toxaphene	0.500	0.367	J *3	ug/L		73	50 - 150

Lab Sample ID: 810-60588-I-3-A MS
Matrix: Water
Analysis Batch: 57488

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 57403

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Toxaphene	ND	*3	3.00	2.17	*3	ug/L		72	65 - 135

Lab Sample ID: 810-60588-J-1-A MS
Matrix: Water
Analysis Batch: 57488

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 57403

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlordane (technical)	ND	*3	1.00	0.905	*3	ug/L		90	65 - 135

QC Sample Results

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

Job ID: 380-44261-1

Method: 505 - Organochlorine Pesticides/PCBs (GC) (Continued)

Lab Sample ID: 810-60433-K-1-A DU
Matrix: Water
Analysis Batch: 57488

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 57403

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
PCB-1016	ND	*3	ND	*3	ug/L		NC	30
PCB-1221	ND	*3	ND	*3	ug/L		NC	30
PCB-1232	ND	*3	ND	*3	ug/L		NC	30
PCB-1242	ND	*3	ND	*3	ug/L		NC	30
PCB-1248	ND	*3	ND	*3	ug/L		NC	30
PCB-1254	ND	*3	ND	*3	ug/L		NC	30
PCB-1260	ND	*3	ND	*3	ug/L		NC	30
Chlordane (technical)	ND	*3	ND	*3	ug/L		NC	30
Toxaphene	ND	*3	ND	*3	ug/L		NC	30
Total PCBs as DCB (Qualitative)	ND		ND		ug/L		NC	
Polychlorinated biphenyls, Total	ND		ND		ug/L		NC	

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 380-37377/4
Matrix: Water
Analysis Batch: 37377

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Nitrate as N	ND		0.050	mg/L			04/19/23 10:09	1
Nitrite as N	ND		0.050	mg/L			04/19/23 10:09	1

Lab Sample ID: LCS 380-37377/7
Matrix: Water
Analysis Batch: 37377

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Nitrate as N	2.50	2.51		mg/L		100	90 - 110
Nitrite as N	1.00	0.999		mg/L		100	90 - 110

Lab Sample ID: LCSD 380-37377/8
Matrix: Water
Analysis Batch: 37377

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

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Nitrate as N	2.50	2.53		mg/L		101	90 - 110	1	20
Nitrite as N	1.00	1.01		mg/L		101	90 - 110	1	20

Lab Sample ID: MRL 380-37377/6
Matrix: Water
Analysis Batch: 37377

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

Analyte	Spike Added	MRL	MRL	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Nitrate as N	0.0500	0.0450	J	mg/L		90	50 - 150
Nitrite as N	0.0500	0.0499	J	mg/L		100	50 - 150

QC Sample Results

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

Job ID: 380-44261-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 380-44250-A-1 MS
Matrix: Water
Analysis Batch: 37377

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
Nitrate as N	9.8		2.50	12.3		mg/L		100	80 - 120
Nitrite as N	ND		1.00	0.837		mg/L		84	80 - 120

Lab Sample ID: 380-44250-A-1 MSD
Matrix: Water
Analysis Batch: 37377

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
Nitrate as N	9.8		2.50	12.6		mg/L		110	80 - 120	2	20
Nitrite as N	ND		1.00	0.853		mg/L		85	80 - 120	2	20

Lab Sample ID: MB 380-37378/4
Matrix: Water
Analysis Batch: 37378

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	mg/L			04/19/23 10:09	1
Sulfate	ND		0.25	mg/L			04/19/23 10:09	1

Lab Sample ID: LCS 380-37378/7
Matrix: Water
Analysis Batch: 37378

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.6		mg/L		102	90 - 110
Sulfate	50.0	51.4		mg/L		103	90 - 110

Lab Sample ID: LCSD 380-37378/8
Matrix: Water
Analysis Batch: 37378

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
Chloride	25.0	25.9		mg/L		103	90 - 110	1	20
Sulfate	50.0	52.0		mg/L		104	90 - 110	1	20

Lab Sample ID: MRL 380-37378/5
Matrix: Water
Analysis Batch: 37378

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	0.125	0.134	J	mg/L		107	50 - 150
Sulfate	0.250	0.248	J	mg/L		99	50 - 150

Lab Sample ID: MRL 380-37378/6
Matrix: Water
Analysis Batch: 37378

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	0.500	0.450	J	mg/L		90	50 - 150
Sulfate	1.00	0.947		mg/L		95	50 - 150

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QC Sample Results

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

Job ID: 380-44261-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 380-44250-A-1 MS
Matrix: Water
Analysis Batch: 37378

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
Chloride	84		25.0	104	E	mg/L		80	80 - 120
Sulfate	150	^2	50.0	202	E	mg/L		95	80 - 120

Lab Sample ID: 380-44250-A-1 MSD
Matrix: Water
Analysis Batch: 37378

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
Chloride	84		25.0	106	E	mg/L		87	80 - 120	2	20
Sulfate	150	^2	50.0	206	E	mg/L		102	80 - 120	2	20

Lab Sample ID: MB 380-37778/4
Matrix: Water
Analysis Batch: 37778

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		5.0	ug/L			04/21/23 06:35	1

Lab Sample ID: LCS 380-37778/5
Matrix: Water
Analysis Batch: 37778

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	100	103		ug/L		103	90 - 110

Lab Sample ID: LCSD 380-37778/6
Matrix: Water
Analysis Batch: 37778

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
Bromide	100	101		ug/L		101	90 - 110	3	10

Lab Sample ID: MRL 380-37778/3
Matrix: Water
Analysis Batch: 37778

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	5.00	6.07		ug/L		121	75 - 125

Lab Sample ID: 380-44421-F-1 MS
Matrix: Water
Analysis Batch: 37778

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
Bromide	130		50.0	177		ug/L		94	80 - 120

QC Sample Results

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

Job ID: 380-44261-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 380-44421-F-1 MSD
Matrix: Water
Analysis Batch: 37778

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
Bromide	130		50.0	182		ug/L		103	80 - 120	2	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 380-37824/17
Matrix: Water
Analysis Batch: 37824

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		1.0	mg/L			04/24/23 20:46	1
Magnesium	ND		0.10	mg/L			04/24/23 20:46	1
Potassium	ND		1.0	mg/L			04/24/23 20:46	1
Sodium	ND		1.0	mg/L			04/24/23 20:46	1

Lab Sample ID: LCS 380-37824/19
Matrix: Water
Analysis Batch: 37824

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	50.0	51.3		mg/L		103	85 - 115
Magnesium	20.0	20.2		mg/L		101	85 - 115
Potassium	20.0	20.5		mg/L		103	85 - 115
Sodium	50.0	50.4		mg/L		101	85 - 115

Lab Sample ID: LCSD 380-37824/20
Matrix: Water
Analysis Batch: 37824

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
Calcium	50.0	51.3		mg/L		103	85 - 115	0	20
Magnesium	20.0	20.1		mg/L		101	85 - 115	0	20
Potassium	20.0	20.5		mg/L		102	85 - 115	0	20
Sodium	50.0	50.3		mg/L		101	85 - 115	0	20

Lab Sample ID: LLCS 380-37824/18
Matrix: Water
Analysis Batch: 37824

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

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1.00	1.01		mg/L		101	50 - 150
Magnesium	0.100	0.0976	J	mg/L		98	50 - 150
Potassium	1.00	0.758	J	mg/L		76	50 - 150
Sodium	1.00	0.899	J	mg/L		90	50 - 150

Lab Sample ID: 380-44593-H-1 MS
Matrix: Water
Analysis Batch: 37824

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
Calcium	15		50.0	66.6		mg/L		104	70 - 130

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QC Sample Results

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

Job ID: 380-44261-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 380-44593-H-1 MS
Matrix: Water
Analysis Batch: 37824

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
Magnesium	9.5		20.0	29.8		mg/L		102	70 - 130
Potassium	1.8		20.0	23.6		mg/L		109	70 - 130
Sodium	18		50.0	66.9		mg/L		99	70 - 130

Lab Sample ID: 380-44593-H-1 MSD
Matrix: Water
Analysis Batch: 37824

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
Calcium	15		50.0	67.7		mg/L		106	70 - 130	2	20
Magnesium	9.5		20.0	30.5		mg/L		105	70 - 130	2	20
Potassium	1.8		20.0	24.2		mg/L		112	70 - 130	3	20
Sodium	18		50.0	68.6		mg/L		102	70 - 130	2	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 380-38079/22
Matrix: Water
Analysis Batch: 38079

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0	ug/L			04/20/23 17:56	1
Arsenic	ND		1.0	ug/L			04/20/23 17:56	1
Beryllium	ND		1.0	ug/L			04/20/23 17:56	1
Cadmium	ND		0.50	ug/L			04/20/23 17:56	1
Chromium	ND		1.0	ug/L			04/20/23 17:56	1
Copper	ND		2.0	ug/L			04/20/23 17:56	1
Lead	ND		0.50	ug/L			04/20/23 17:56	1
Nickel	ND		5.0	ug/L			04/20/23 17:56	1
Selenium	ND		5.0	ug/L			04/20/23 17:56	1
Thallium	ND		1.0	ug/L			04/20/23 17:56	1
Zinc	ND		20	ug/L			04/20/23 17:56	1

Lab Sample ID: LLCS 380-38079/21
Matrix: Water
Analysis Batch: 38079

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

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	4.00	4.02		ug/L		101	50 - 150
Selenium	2.00	2.09	J	ug/L		105	50 - 150

Lab Sample ID: MB 380-37417/1-A
Matrix: Water
Analysis Batch: 37574

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 37417

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Antimony	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Arsenic	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Arsenic	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1

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QC Sample Results

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

Job ID: 380-44261-1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 380-37417/1-A
Matrix: Water
Analysis Batch: 37574

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 37417

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Beryllium	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Cadmium	ND		0.50	ug/L		04/20/23 12:18	04/20/23 19:09	1
Cadmium	ND		0.50	ug/L		04/20/23 12:18	04/20/23 19:09	1
Chromium	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Chromium	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Copper	ND		2.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Copper	ND		2.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Lead	ND		0.50	ug/L		04/20/23 12:18	04/20/23 19:09	1
Lead	ND		0.50	ug/L		04/20/23 12:18	04/20/23 19:09	1
Nickel	ND		5.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Nickel	ND		5.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Selenium	ND		5.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Selenium	ND		5.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Silver	ND		0.50	ug/L		04/20/23 12:18	04/20/23 19:09	1
Thallium	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Thallium	ND		1.0	ug/L		04/20/23 12:18	04/20/23 19:09	1
Zinc	ND		20	ug/L		04/20/23 12:18	04/20/23 19:09	1
Zinc	ND		20	ug/L		04/20/23 12:18	04/20/23 19:09	1

Lab Sample ID: LCS 380-37417/3-A
Matrix: Water
Analysis Batch: 37574

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 37417

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	50.0	50.5		ug/L		101	85 - 115
Antimony	50.0	50.5		ug/L		101	85 - 115
Arsenic	50.0	52.8		ug/L		106	85 - 115
Arsenic	50.0	52.8		ug/L		106	85 - 115
Beryllium	25.0	25.0		ug/L		100	85 - 115
Beryllium	25.0	25.0		ug/L		100	85 - 115
Cadmium	25.0	25.3		ug/L		101	85 - 115
Cadmium	25.0	25.3		ug/L		101	85 - 115
Chromium	50.0	50.2		ug/L		100	85 - 115
Chromium	50.0	50.2		ug/L		100	85 - 115
Copper	50.0	51.8		ug/L		104	85 - 115
Copper	50.0	51.8		ug/L		104	85 - 115
Lead	50.0	50.8		ug/L		102	85 - 115
Lead	50.0	50.8		ug/L		102	85 - 115
Nickel	50.0	50.3		ug/L		101	85 - 115
Nickel	50.0	50.3		ug/L		101	85 - 115
Selenium	50.0	51.2		ug/L		102	85 - 115
Selenium	50.0	51.2		ug/L		102	85 - 115
Silver	25.0	25.1		ug/L		100	85 - 115
Thallium	50.0	50.1		ug/L		100	85 - 115
Thallium	50.0	50.1		ug/L		100	85 - 115
Zinc	50.0	50.4		ug/L		101	85 - 115
Zinc	50.0	50.4		ug/L		101	85 - 115

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 380-37417/4-A
Matrix: Water
Analysis Batch: 37574

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 37417

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Antimony	50.0	50.8		ug/L		102	85 - 115	1	20	
Antimony	50.0	50.8		ug/L		102	85 - 115	1	20	
Arsenic	50.0	53.6		ug/L		107	85 - 115	2	20	
Arsenic	50.0	53.6		ug/L		107	85 - 115	2	20	
Beryllium	25.0	25.5		ug/L		102	85 - 115	2	20	
Beryllium	25.0	25.5		ug/L		102	85 - 115	2	20	
Cadmium	25.0	25.7		ug/L		103	85 - 115	1	20	
Cadmium	25.0	25.7		ug/L		103	85 - 115	1	20	
Chromium	50.0	51.3		ug/L		103	85 - 115	2	20	
Chromium	50.0	51.3		ug/L		103	85 - 115	2	20	
Copper	50.0	52.3		ug/L		105	85 - 115	1	20	
Copper	50.0	52.3		ug/L		105	85 - 115	1	20	
Lead	50.0	51.4		ug/L		103	85 - 115	1	20	
Lead	50.0	51.4		ug/L		103	85 - 115	1	20	
Nickel	50.0	51.1		ug/L		102	85 - 115	2	20	
Nickel	50.0	51.1		ug/L		102	85 - 115	2	20	
Selenium	50.0	52.3		ug/L		105	85 - 115	2	20	
Selenium	50.0	52.3		ug/L		105	85 - 115	2	20	
Silver	25.0	25.8		ug/L		103	85 - 115	3	20	
Thallium	50.0	51.3		ug/L		103	85 - 115	2	20	
Thallium	50.0	51.3		ug/L		103	85 - 115	2	20	
Zinc	50.0	50.5		ug/L		101	85 - 115	0	20	
Zinc	50.0	50.5		ug/L		101	85 - 115	0	20	

Lab Sample ID: LLCS 380-37417/2-A
Matrix: Water
Analysis Batch: 37574

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 37417

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec		Limit
							Limits	RPD	
Antimony	1.00	0.998	J	ug/L		100	50 - 150		
Antimony	1.00	0.998	J	ug/L		100	50 - 150		
Arsenic	1.00	0.953	J	ug/L		95	50 - 150		
Arsenic	1.00	0.953	J	ug/L		95	50 - 150		
Beryllium	1.00	1.01		ug/L		101	50 - 150		
Beryllium	1.00	1.01		ug/L		101	50 - 150		
Cadmium	0.500	0.509		ug/L		102	50 - 150		
Cadmium	0.500	0.509		ug/L		102	50 - 150		
Chromium	1.00	0.920	J	ug/L		92	50 - 150		
Chromium	1.00	0.920	J	ug/L		92	50 - 150		
Copper	2.00	2.09		ug/L		104	50 - 150		
Copper	2.00	2.09		ug/L		104	50 - 150		
Lead	0.500	0.500		ug/L		100	50 - 150		
Lead	0.500	0.500		ug/L		100	50 - 150		
Nickel	5.00	5.07		ug/L		101	50 - 150		
Nickel	5.00	5.07		ug/L		101	50 - 150		
Selenium	5.00	5.13		ug/L		103	50 - 150		
Selenium	5.00	5.13		ug/L		103	50 - 150		
Silver	0.500	0.366	J	ug/L		73	50 - 150		
Silver	0.500	0.366	J	ug/L		73	50 - 150		

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LLCS 380-37417/2-A
Matrix: Water
Analysis Batch: 37574

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 37417

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	1.00	0.974	J	ug/L		97	50 - 150
Thallium	1.00	0.974	J	ug/L		97	50 - 150
Zinc	20.0	20.1		ug/L		100	50 - 150
Zinc	20.0	20.1		ug/L		100	50 - 150

Lab Sample ID: 380-44178-AA-1-B MS
Matrix: Water
Analysis Batch: 37574

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 37417

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		50.0	50.8		ug/L		102	70 - 130
Antimony	ND		50.0	50.8		ug/L		102	70 - 130
Arsenic	ND		50.0	53.9		ug/L		108	70 - 130
Arsenic	ND		50.0	53.9		ug/L		108	70 - 130
Beryllium	ND		25.0	25.6		ug/L		103	70 - 130
Beryllium	ND		25.0	25.6		ug/L		103	70 - 130
Cadmium	ND		25.0	25.6		ug/L		102	70 - 130
Cadmium	ND		25.0	25.6		ug/L		102	70 - 130
Chromium	ND		50.0	50.3		ug/L		101	70 - 130
Chromium	ND		50.0	50.3		ug/L		101	70 - 130
Copper	ND		50.0	50.9		ug/L		102	70 - 130
Copper	ND		50.0	50.9		ug/L		102	70 - 130
Lead	ND		50.0	50.3		ug/L		101	70 - 130
Lead	ND		50.0	50.3		ug/L		101	70 - 130
Nickel	ND		50.0	50.0		ug/L		100	70 - 130
Nickel	ND		50.0	50.0		ug/L		100	70 - 130
Selenium	ND		50.0	52.4		ug/L		105	70 - 130
Selenium	ND		50.0	52.4		ug/L		105	70 - 130
Silver	ND	^5-	25.0	24.6		ug/L		97	70 - 130
Thallium	ND		50.0	49.6		ug/L		99	70 - 130
Thallium	ND		50.0	49.6		ug/L		99	70 - 130
Zinc	ND		50.0	50.9		ug/L		102	70 - 130
Zinc	ND		50.0	50.9		ug/L		102	70 - 130

Lab Sample ID: 380-44178-AA-1-C MSD
Matrix: Water
Analysis Batch: 37574

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 37417

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		50.0	49.7		ug/L		99	70 - 130	2	20
Antimony	ND		50.0	49.7		ug/L		99	70 - 130	2	20
Arsenic	ND		50.0	54.5		ug/L		109	70 - 130	1	20
Arsenic	ND		50.0	54.5		ug/L		109	70 - 130	1	20
Beryllium	ND		25.0	25.9		ug/L		104	70 - 130	1	20
Beryllium	ND		25.0	25.9		ug/L		104	70 - 130	1	20
Cadmium	ND		25.0	24.8		ug/L		99	70 - 130	3	20
Cadmium	ND		25.0	24.8		ug/L		99	70 - 130	3	20
Chromium	ND		50.0	50.8		ug/L		102	70 - 130	1	20
Chromium	ND		50.0	50.8		ug/L		102	70 - 130	1	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 380-44178-AA-1-C MSD
Matrix: Water
Analysis Batch: 37574

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 37417

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Copper	ND		50.0	50.9		ug/L		102	70 - 130	0	20
Copper	ND		50.0	50.9		ug/L		102	70 - 130	0	20
Lead	ND		50.0	50.1		ug/L		100	70 - 130	0	20
Lead	ND		50.0	50.1		ug/L		100	70 - 130	0	20
Nickel	ND		50.0	50.2		ug/L		100	70 - 130	0	20
Nickel	ND		50.0	50.2		ug/L		100	70 - 130	0	20
Selenium	ND		50.0	53.0		ug/L		106	70 - 130	1	20
Selenium	ND		50.0	53.0		ug/L		106	70 - 130	1	20
Silver	ND	^5-	25.0	24.1		ug/L		95	70 - 130	2	20
Thallium	ND		50.0	50.3		ug/L		101	70 - 130	1	20
Thallium	ND		50.0	50.3		ug/L		101	70 - 130	1	20
Zinc	ND		50.0	51.2		ug/L		102	70 - 130	1	20
Zinc	ND		50.0	51.2		ug/L		102	70 - 130	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 810-56865/1-A
Matrix: Water
Analysis Batch: 56889

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56865

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.10	ug/L		04/26/23 18:55	04/26/23 22:41	1

Lab Sample ID: LCS 810-56865/3-A
Matrix: Water
Analysis Batch: 56889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56865

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.00	0.987		ug/L		99	85 - 115

Lab Sample ID: LLCS 810-56865/2-A
Matrix: Water
Analysis Batch: 56889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56865

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.100	ND		ug/L		82	50 - 150

Lab Sample ID: 810-60803-B-1-B MS
Matrix: Water
Analysis Batch: 56889

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 56865

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		1.00	0.990		ug/L		99	70 - 130

Lab Sample ID: 810-60803-B-1-C MSD
Matrix: Water
Analysis Batch: 56889

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 56865

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		1.00	0.966		ug/L		97	70 - 130	3	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 380-37853/1
Matrix: Water
Analysis Batch: 37853

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
A kalinity	ND		2.0	mg/L			04/24/23 14:32	1
Bicarbonate Alkalinity as CaCO3	ND		2.0	mg/L			04/24/23 14:32	1
Carbonate Alkalinity as CaCO3	ND		2.0	mg/L			04/24/23 14:32	1

Lab Sample ID: LCS 380-37853/3
Matrix: Water
Analysis Batch: 37853

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
A kalinity	100	97.0		mg/L		97	90 - 110

Lab Sample ID: LCSD 380-37853/18
Matrix: Water
Analysis Batch: 37853

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
A kalinity	100	98.4		mg/L		98	90 - 110	1	20

Lab Sample ID: LLCS 380-37853/4
Matrix: Water
Analysis Batch: 37853

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

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
A kalinity	20.0	21.0		mg/L		105	90 - 110

Lab Sample ID: MRL 380-37853/2
Matrix: Water
Analysis Batch: 37853

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
A kalinity	2.00	1.55	J	mg/L		78	50 - 150

Lab Sample ID: 380-44451-I-1 MS
Matrix: Water
Analysis Batch: 37853

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
A kalinity	130		100	214		mg/L		84	80 - 120

Lab Sample ID: 380-44451-I-1 MSD
Matrix: Water
Analysis Batch: 37853

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
A kalinity	130		100	214		mg/L		84	80 - 120	0	20

QC Sample Results

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

Job ID: 380-44261-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 380-44451-I-1 DU
Matrix: Water
Analysis Batch: 37853

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Alkalinity	130		131		mg/L		0.8	20
Bicarbonate Alkalinity as CaCO3	84	^2	83.6		mg/L		0.05	20
Carbonate Alkalinity as CaCO3	46		47.4		mg/L		2	20

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 380-37856/2
Matrix: Water
Analysis Batch: 37856

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Specific Conductance	ND		2.0	umhos/cm			04/24/23 14:32	1

Lab Sample ID: LCS 380-37856/4
Matrix: Water
Analysis Batch: 37856

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Specific Conductance	1000	1000		umhos/cm		100	90 - 110		

Lab Sample ID: LCSD 380-37856/16
Matrix: Water
Analysis Batch: 37856

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

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Specific Conductance	1000	995		umhos/cm		100	90 - 110	1	10

Lab Sample ID: MRL 380-37856/3
Matrix: Water
Analysis Batch: 37856

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

Analyte	Spike Added	MRL	MRL	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Specific Conductance	2.00	1.90	J	umhos/cm		95	50 - 150		

Lab Sample ID: 380-44451-I-1 DU
Matrix: Water
Analysis Batch: 37856

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Specific Conductance	740		742		umhos/cm		0.07	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 380-37509/1
Matrix: Water
Analysis Batch: 37509

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Total Dissolved Solids	ND		10	mg/L			04/20/23 22:37	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: HLCS 380-37509/5
Matrix: Water
Analysis Batch: 37509

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

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	700	700		mg/L		100	80 - 114

Lab Sample ID: LCS 380-37509/4
Matrix: Water
Analysis Batch: 37509

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	175	184		mg/L		105	80 - 114

Lab Sample ID: MRL 380-37509/2
Matrix: Water
Analysis Batch: 37509

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	10.0	15.0		mg/L		150	50 - 150

Lab Sample ID: MRL 380-37509/3
Matrix: Water
Analysis Batch: 37509

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	10.0	14.0		mg/L		140	50 - 150

Lab Sample ID: 380-44443-C-1 DU
Matrix: Water
Analysis Batch: 37509

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	570		554		mg/L		3	10

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 380-37852/40
Matrix: Water
Analysis Batch: 37852

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.050	mg/L			04/24/23 17:53	1

Lab Sample ID: MB 380-37852/6
Matrix: Water
Analysis Batch: 37852

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.050	mg/L			04/24/23 15:29	1

QC Sample Results

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

Job ID: 380-44261-1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 380-37852/42
Matrix: Water
Analysis Batch: 37852

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	1.00	0.965		mg/L		97	90 - 110

Lab Sample ID: LCSD 380-37852/43
Matrix: Water
Analysis Batch: 37852

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
Fluoride	1.00	0.981		mg/L		98	90 - 110	2	10

Lab Sample ID: MRL 380-37852/41
Matrix: Water
Analysis Batch: 37852

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.0500	0.0466	J	mg/L		93	50 - 150

Lab Sample ID: MRL 380-37852/7
Matrix: Water
Analysis Batch: 37852

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.0500	0.0475	J	mg/L		95	50 - 150

Lab Sample ID: 380-44044-A-2 MS
Matrix: Water
Analysis Batch: 37852

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
Fluoride	0.097		1.00	1.09		mg/L		99	80 - 120

Lab Sample ID: 380-44044-A-2 MSD
Matrix: Water
Analysis Batch: 37852

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
Fluoride	0.097		1.00	1.10		mg/L		100	80 - 120	1	20

Method: SM 4500 H+ B - pH

Lab Sample ID: MB 380-37858/4
Matrix: Water
Analysis Batch: 37858

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.9			SU			04/24/23 14:32	1

QC Sample Results

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

Job ID: 380-44261-1

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCS 380-37858/5
Matrix: Water
Analysis Batch: 37858

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	6.00	6.0		SU		100	98 - 102

Lab Sample ID: LCSD 380-37858/17
Matrix: Water
Analysis Batch: 37858

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
pH	6.00	6.0		SU		100	98 - 102	0	2

Lab Sample ID: 380-44451-I-1 DU
Matrix: Water
Analysis Batch: 37858

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	9.5		9.5		SU		0.3	2

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 380-37601/1
Matrix: Water
Analysis Batch: 37601

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.050	mg/L			04/21/23 14:25	1

Lab Sample ID: LCS 380-37601/4
Matrix: Water
Analysis Batch: 37601

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	0.250	0.240		mg/L		96	90 - 110

Lab Sample ID: LCSD 380-37601/11
Matrix: Water
Analysis Batch: 37601

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
Sulfide	0.250	0.254		mg/L		102	90 - 110	6	20

Lab Sample ID: MRL 380-37601/10
Matrix: Water
Analysis Batch: 37601

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	0.0500	0.0570		mg/L		114	50 - 150

QC Sample Results

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

Job ID: 380-44261-1

Method: SM 4500 S2 D - Sulfide, Total (Continued)

Lab Sample ID: MRL 380-37601/2
Matrix: Water
Analysis Batch: 37601

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	0.0500	0.0610		mg/L		122	50 - 150

Lab Sample ID: 380-44261-1 MS
Matrix: Drinking Water
Analysis Batch: 37601

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	ND	F1	0.250	0.115	F1	mg/L		46	80 - 120

Lab Sample ID: 380-44261-1 MSD
Matrix: Drinking Water
Analysis Batch: 37601

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfide	ND	F1	0.250	0.116	F1	mg/L		46	80 - 120	1	20

Method: 625 Acid/Base/PAH + TICs - EPA 625 Base/Neutral and Acid Organics i

Lab Sample ID: 105222-B1
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-41042_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
2,6-Di-tert-butyl-4-methylphenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/05/23 00:47	1
2,6-Di-tert-butylphenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/05/23 00:47	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
6-tert-butyl-2,4-dimethylphenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/05/23 00:47	1
Acenaphthene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Acenaphthylene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Anthracene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Biphenyl	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Chrysene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Dibenzothiophene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		04/13/23 00:00	05/05/23 00:47	1
Fluoranthene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Fluorene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: 105222-B1
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-41042_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Perylene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Phenanthrene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
p-tert-Butylphenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/05/23 00:47	1
Pyrene	ND		0.005	0.001	µg/L		04/13/23 00:00	05/05/23 00:47	1
Surrogate	Blank %Recovery	Blank Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	73		27 - 133				04/13/23 00:00	05/05/23 00:47	1
(d10-Phenanthrene)	76		43 - 129				04/13/23 00:00	05/05/23 00:47	1
(d12-Chrysene)	65		52 - 144				04/13/23 00:00	05/05/23 00:47	1
(d12-Perylene)	82		36 - 161				04/13/23 00:00	05/05/23 00:47	1
(d8-Naphthalene)	54		25 - 125				04/13/23 00:00	05/05/23 00:47	1

Lab Sample ID: 105222-B1
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-41042_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
2,4,6-Trichlorophenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
2,4-Dichlorophenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
2,4-Dinitrophenol	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
2,6-Dichlorophenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
2-Chloronaphthalene	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
2-Chlorophenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
2-Methyl-4,6-dinitrophenol	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
2-Methylphenol	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
2-Nitroaniline	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
2-Nitrophenol	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
3+4-Methylphenol	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
3-Nitroaniline	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
4-Bromophenylphenyl ether	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
4-Chloro-3-methylphenol	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
4-Chloroaniline	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
4-Chlorophenylphenyl ether	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
4-Nitroaniline	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
4-Nitrophenol	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
Aniline	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
Benzidine	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
Benzoic Acid	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
Benzyl Alcohol	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
Bis(2-Chloroethoxy) methane	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
Bis(2-Chloroethyl) ether	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
Bis(2-Chloroisopropyl) ether	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
Dibenzofuran	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
Hexachloroethane	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
Nitrobenzene	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
N-Nitrosodi-n-propylamine	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: 105222-B1
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-41042_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodiphenylamine	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
Pentachlorophenol	ND		0.1	0.05	µg/L		04/13/23 00:00	05/11/23 08:58	1
Phenol	ND		0.2	0.1	µg/L		04/13/23 00:00	05/11/23 08:58	1
Surrogate	Blank %Recovery	Blank Qualifier	Limits				Prepared	Analyzed	Dil Fac
(2,4,6-Tribromophenol)	50		30 - 130				04/13/23 00:00	05/11/23 08:58	1
(d5-Phenol)	57		0 - 130				04/13/23 00:00	05/11/23 08:58	1

Lab Sample ID: 105222-BS1
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-41042_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1-Methylnaphthalene	0.5	0.29		µg/L		58	31 - 128
1-Methylphenanthrene	0.5	0.374		µg/L		75	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.344		µg/L		69	55 - 122
2,6-Dimethylnaphthalene	0.5	0.301		µg/L		60	48 - 120
2,6-Di-tert-butyl-4-methylphenol	1	0.58		µg/L		58	50 - 150
2,6-Di-tert-butylphenol	1	0.558		µg/L		56	50 - 150
2-Methylnaphthalene	1.5	0.728		µg/L		49	47 - 130
6-tert-butyl-2,4-dimethylphenol	1	0.508		µg/L		51	50 - 150
Acenaphthene	1.5	1.03		µg/L		69	53 - 131
Acenaphthylene	1.5	0.941		µg/L		63	43 - 140
Anthracene	1.5	1.23		µg/L		82	58 - 135
Benz[a]anthracene	1.5	0.994		µg/L		66	55 - 145
Benzo[a]pyrene	1.5	1.27		µg/L		85	51 - 143
Benzo[b]fluoranthene	1.5	1.25		µg/L		83	46 - 165
Benzo[e]pyrene	0.5	0.355		µg/L		71	42 - 152
Benzo[g,h,i]perylene	1.5	1.35		µg/L		90	63 - 133
Benzo[k]fluoranthene	1.5	1.38		µg/L		92	56 - 145
Biphenyl	0.5	0.285		µg/L		57	56 - 119
Chrysene	1.5	1.02		µg/L		68	56 - 141
Dibenz[a,h]anthracene	1.5	1.58		µg/L		105	55 - 150
Dibenzo[a,l]pyrene	0.5	0.248		µg/L		50	50 - 150
Dibenzothiophene	0.5	0.38		µg/L		76	46 - 126
Disalicylidenepropanediamine	50	40.4		µg/L		81	50 - 150
Fluoranthene	1.5	1.48		µg/L		99	60 - 146
Fluorene	1.5	1.04		µg/L		69	58 - 131
Indeno[1,2,3-cd]pyrene	1.5	1.41		µg/L		94	50 - 151
Naphthalene	1.5	0.706		µg/L		47	41 - 126
Perylene	0.5	0.4		µg/L		80	48 - 141
Phenanthrene	1.5	1.21		µg/L		81	67 - 127
p-tert-Butylphenol	1	0.816		µg/L		82	50 - 150
Pyrene	1.5	1.52		µg/L		101	54 - 156
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
(d10-Acenaphthene)	54		27 - 133				
(d10-Phenanthrene)	71		43 - 129				

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: 105222-BS1
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-41042_P

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
(d12-Chrysene)	63		52 - 144
(d12-Perylene)	81		36 - 161
(d8-Naphthalene)	53		25 - 125

Lab Sample ID: 105222-BS1
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-41042_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,5-Trichlorophenol	1	0.928		µg/L		93	30 - 130
2,4,6-Trichlorophenol	1	0.914		µg/L		91	30 - 130
2,4-Dichlorophenol	1	0.77		µg/L		77	51 - 117
2,4-Dinitrophenol	1	1.07		µg/L		107	0 - 152
2,6-Dichlorophenol	1	0.405		µg/L		41	30 - 130
2-Chloronaphthalene	1	0.79		µg/L		79	53 - 130
2-Chlorophenol	1	0.657		µg/L		66	41 - 120
2-Methyl-4,6-dinitrophenol	1	0.999		µg/L		100	0 - 141
2-Methylphenol	1	0.641		µg/L		64	40 - 117
2-Nitroaniline	1	0.968		µg/L		97	69 - 114
2-Nitrophenol	1	0.699		µg/L		70	40 - 117
3+4-Methylphenol	1	0.81		µg/L		81	0 - 130
3-Nitroaniline	1	0.978		µg/L		98	23 - 137
4-Bromophenylphenyl ether	1	0.53		µg/L		53	61 - 132
4-Chloro-3-methylphenol	1	0.862		µg/L		86	51 - 128
4-Chloroaniline	1	0.512		µg/L		51	50 - 150
4-Chlorophenylphenyl ether	1	0.848		µg/L		85	63 - 130
4-Nitroaniline	1	0.99		µg/L		99	10 - 159
4-Nitrophenol	1	0.817		µg/L		82	10 - 164
Aniline	1	0.726		µg/L		73	50 - 150
Benzidine	1	0		µg/L		0	0 - 125
Benzoic Acid	1	1.01		µg/L		101	2 - 145
Benzyl Alcohol	1	0.79		µg/L		79	43 - 148
Bis(2-Chloroethoxy) methane	1	0.806		µg/L		81	66 - 122
Bis(2-Chloroethyl) ether	1	0.59		µg/L		59	43 - 127
Bis(2-Chloroisopropyl) ether	1	0.916		µg/L		92	49 - 128
Dibenzofuran	1	0.837		µg/L		84	50 - 150
Hexachloroethane	1	0.628		µg/L		63	27 - 130
Nitrobenzene	1	0.734		µg/L		73	54 - 111
N-Nitrosodi-n-propylamine	1	0.846		µg/L		85	61 - 152
N-Nitrosodiphenylamine	1	0.927		µg/L		93	49 - 142
Pentachlorophenol	1	0.954		µg/L		95	36 - 111
Phenol	1	0.575		µg/L		57	29 - 114

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
(2,4,6-Tribromophenol)	54		30 - 130
(d5-Phenol)	58		0 - 130

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: 105222-BS2
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-41042_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.376		µg/L		75	31 - 128	26	30
1-Methylphenanthrene	0.5	0.387		µg/L		77	66 - 127	3	30
2,3,5-Trimethylnaphthalene	0.5	0.374		µg/L		75	55 - 122	8	30
2,6-Dimethylnaphthalene	0.5	0.337		µg/L		67	48 - 120	11	30
2,6-Di-tert-butyl-4-methylphenol	1	0.585		µg/L		59	50 - 150	2	30
2,6-Di-tert-butylphenol	1	0.588		µg/L		59	50 - 150	5	30
2-Methylnaphthalene	1.5	0.93		µg/L		62	47 - 130	23	30
6-tert-butyl-2,4-dimethylphenol	1	0.566		µg/L		57	50 - 150	11	30
Acenaphthene	1.5	1.21		µg/L		81	53 - 131	16	30
Acenaphthylene	1.5	1.22		µg/L		81	43 - 140	25	30
Anthracene	1.5	1.24		µg/L		83	58 - 135	1	30
Benz[a]anthracene	1.5	1.05		µg/L		70	55 - 145	6	30
Benzo[a]pyrene	1.5	1.28		µg/L		85	51 - 143	0	30
Benzo[b]fluoranthene	1.5	1.32		µg/L		88	46 - 165	6	30
Benzo[e]pyrene	0.5	0.364		µg/L		73	42 - 152	3	30
Benzo[g,h,i]perylene	1.5	1.37		µg/L		91	63 - 133	1	30
Benzo[k]fluoranthene	1.5	1.33		µg/L		89	56 - 145	3	30
Biphenyl	0.5	0.271		µg/L		54	56 - 119	5	30
Chrysene	1.5	1.11		µg/L		74	56 - 141	8	30
Dibenz[a,h]anthracene	1.5	1.79		µg/L		119	55 - 150	12	30
Dibenzo[a,l]pyrene	0.5	0.293		µg/L		59	50 - 150	17	30
Dibenzothiophene	0.5	0.388		µg/L		78	46 - 126	3	30
Disalicylidenepropanediamine	50	44.8		µg/L		90	50 - 150	11	30
Fluoranthene	1.5	1.43		µg/L		95	60 - 146	4	30
Fluorene	1.5	1.25		µg/L		83	58 - 131	18	30
Indeno[1,2,3-cd]pyrene	1.5	1.53		µg/L		102	50 - 151	8	30
Naphthalene	1.5	0.91		µg/L		61	41 - 126	26	30
Perylene	0.5	0.346		µg/L		69	48 - 141	15	30
Phenanthrene	1.5	1.19		µg/L		79	67 - 127	2	30
p-tert-Butylphenol	1	1.04		µg/L		104	50 - 150	8	30
Pyrene	1.5	1.39		µg/L		93	54 - 156	8	30

Surrogate	LCS DUP		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	73		27 - 133
(d10-Phenanthrene)	76		43 - 129
(d12-Chrysene)	68		52 - 144
(d12-Perylene)	77		36 - 161
(d8-Naphthalene)	62		25 - 125

Lab Sample ID: 105222-BS2
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-41042_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,5-Trichlorophenol	1	0.891		µg/L		89	30 - 130	4	30
2,4,6-Trichlorophenol	1	0.929		µg/L		93	30 - 130	2	30
2,4-Dichlorophenol	1	0.871		µg/L		87	51 - 117	12	30
2,4-Dinitrophenol	1	0.955		µg/L		95	0 - 152	11	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: 105222-BS2
Matrix: BlankMatrix
Analysis Batch: O-41042

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-41042_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,6-Dichlorophenol	1	0.427		µg/L		43	30 - 130	7	30
2-Chloronaphthalene	1	0.831		µg/L		83	53 - 130	5	30
2-Chlorophenol	1	0.715		µg/L		71	41 - 120	9	30
2-Methyl-4,6-dinitrophenol	1	0.941		µg/L		94	0 - 141	6	30
2-Methylphenol	1	0.718		µg/L		72	40 - 117	12	30
2-Nitroaniline	1	1.02		µg/L		102	69 - 114	5	30
2-Nitrophenol	1	0.786		µg/L		79	40 - 117	12	30
3+4-Methylphenol	1	0.898		µg/L		90	0 - 130	11	30
3-Nitroaniline	1	1.03		µg/L		103	23 - 137	5	30
4-Bromophenylphenyl ether	1	0.532		µg/L		53	61 - 132	0	30
4-Chloro-3-methylphenol	1	0.911		µg/L		91	51 - 128	6	30
4-Chloroaniline	1	0.675		µg/L		68	50 - 150	29	30
4-Chlorophenylphenyl ether	1	0.873		µg/L		87	63 - 130	2	30
4-Nitroaniline	1	1.02		µg/L		102	10 - 159	3	30
4-Nitrophenol	1	0.846		µg/L		85	10 - 164	4	30
Aniline	1	0.792		µg/L		79	50 - 150	8	30
Benzidine	1	0		µg/L		0	0 - 125	0	30
Benzoic Acid	1	0.919		µg/L		92	2 - 145	9	30
Benzyl Alcohol	1	0.912		µg/L		91	43 - 148	14	30
Bis(2-Chloroethoxy) methane	1	0.894		µg/L		89	66 - 122	9	30
Bis(2-Chloroethyl) ether	1	0.649		µg/L		65	43 - 127	10	30
Bis(2-Chloroisopropyl) ether	1	0.854		µg/L		85	49 - 128	8	30
Dibenzofuran	1	0.878		µg/L		88	50 - 150	5	30
Hexachloroethane	1	0.654		µg/L		65	27 - 130	3	30
Nitrobenzene	1	0.808		µg/L		81	54 - 111	10	30
N-Nitrosodi-n-propylamine	1	0.925		µg/L		93	61 - 152	8	30
N-Nitrosodiphenylamine	1	0.948		µg/L		95	49 - 142	2	30
Pentachlorophenol	1	0.858		µg/L		86	36 - 111	10	30
Phenol	1	0.635		µg/L		63	29 - 114	10	30

Surrogate	LCS DUP %Recovery	LCS DUP Qualifier	Limits
(2,4,6-Tribromophenol)	54		30 - 130
(d5-Phenol)	64		0 - 130

Method: 8015 Ethanol - SW846 8015B Gasoline Range Organics

Lab Sample ID: 23MED004WB
Matrix: WATER
Analysis Batch: 23MED004W

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ETHANOL	ND	U	2000		ug/L			04/21/23 13:13	1

Lab Sample ID: 23MED004WL
Matrix: WATER
Analysis Batch: 23MED004W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
ETHANOL	10000	9310		ug/L		93	60 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

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

Lab Sample ID: 23VG39D12B
Matrix: WATER
Analysis Batch: 23VG39D12

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			04/25/23 12:38	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE								04/25/23 12:38	1

Lab Sample ID: 23VG39D12L
Matrix: WATER
Analysis Batch: 23VG39D12

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	0.508		mg/L		102	60 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
BROMOFLUOROBENZENE	117		70 - 130				

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

Lab Sample ID: 23DSD033WB
Matrix: WATER
Analysis Batch: 23DSD033W

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			04/28/23 15:42	1
JP5	ND	U	0.050		mg/L			04/28/23 15:42	1
JP8	ND	U	0.050		mg/L			04/28/23 15:42	1
MOTOR OIL	ND	U	0.050		mg/L			04/28/23 15:42	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOBENZENE								04/28/23 15:42	1
HEXACOSANE								04/28/23 15:42	1

Lab Sample ID: 23DSD033WL
Matrix: WATER
Analysis Batch: 23DSD033W

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	2.26		mg/L		90	50 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
BROMOBENZENE	66		60 - 130				
HEXACOSANE	90		60 - 130				

Lab Sample ID: 23J5D033WL
Matrix: WATER
Analysis Batch: 23DSD033W

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	2.23		mg/L		89	30 - 160

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-44261-1

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

<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	72		60 - 130
HEXACOSANE	79		60 - 130

Lab Sample ID: 23J8D033WL
Matrix: WATER
Analysis Batch: 23DSD033W

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

<i>Analyte</i>	<i>Spike</i> <i>Added</i>	<i>LCS</i> <i>Result</i>	<i>LCS</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i> <i>Limits</i>
JP8	2.50	2.65		mg/L		106	30 - 160

<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	97		60 - 130
HEXACOSANE	80		60 - 130

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QC Association Summary

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

Job ID: 380-44261-1

GC/MS VOA

Analysis Batch: 38074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	524.2	
380-44261-2	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	524.2	
MB 380-38074/8	Method Blank	Total/NA	Water	524.2	
LCS 380-38074/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-38074/4	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-38074/6	Lab Control Sample	Total/NA	Water	524.2	
MRL 380-38074/7	Lab Control Sample	Total/NA	Water	524.2	

Analysis Batch: 38220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	524.2	
380-44261-2	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	524.2	
MB 380-38220/5	Method Blank	Total/NA	Water	524.2	
LCS 380-38220/2	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-38220/3	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-38220/4	Lab Control Sample	Total/NA	Water	524.2	

Analysis Batch: 38318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	524.2	
380-44261-2	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	524.2	

GC/MS Semi VOA

Prep Batch: 57237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LLCS 810-57237/3-A	Lab Control Sample	Total/NA	Water	525.2	

Prep Batch: 57414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
MB 810-57414/1-A	Method Blank	Total/NA	Water	525.2	
LCS 810-57414/3-A	Lab Control Sample	Total/NA	Water	525.2	
LLCS 810-57414/2-A	Lab Control Sample	Total/NA	Water	525.2	
810-61248-O-5-A MS	Matrix Spike	Total/NA	Water	525.2	
860-47346-B-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 57529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2 LL	57414
MB 810-57414/1-A	Method Blank	Total/NA	Water	525.2 LL	57414
LCS 810-57414/3-A	Lab Control Sample	Total/NA	Water	525.2 LL	57414
LLCS 810-57237/3-A	Lab Control Sample	Total/NA	Water	525.2 LL	57237
LLCS 810-57414/2-A	Lab Control Sample	Total/NA	Water	525.2 LL	57414
810-61248-O-5-A MS	Matrix Spike	Total/NA	Water	525.2 LL	57414
860-47346-B-1-A DU	Duplicate	Total/NA	Water	525.2 LL	57414

GC Semi VOA

Prep Batch: 37791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	504.1	

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-44261-1

GC Semi VOA (Continued)

Prep Batch: 37791 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-2	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	504.1	
MBL 380-37791/4-A	Method Blank	Total/NA	Water	504.1	
LCS 380-37791/3-A	Lab Control Sample	Total/NA	Water	504.1	
MRL 380-37791/1-A	Lab Control Sample	Total/NA	Water	504.1	
MRL 380-37791/2-A	Lab Control Sample	Total/NA	Water	504.1	
380-44167-T-1-A MS	Matrix Spike	Total/NA	Water	504.1	
380-44182-I-1-A DU	Duplicate	Total/NA	Water	504.1	

Analysis Batch: 38045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	504.1	37791
380-44261-2	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	504.1	37791
MBL 380-37791/4-A	Method Blank	Total/NA	Water	504.1	37791
LCS 380-37791/3-A	Lab Control Sample	Total/NA	Water	504.1	37791
MRL 380-37791/1-A	Lab Control Sample	Total/NA	Water	504.1	37791
MRL 380-37791/2-A	Lab Control Sample	Total/NA	Water	504.1	37791
380-44167-T-1-A MS	Matrix Spike	Total/NA	Water	504.1	37791
380-44182-I-1-A DU	Duplicate	Total/NA	Water	504.1	37791

Prep Batch: 57403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	505	
MB 810-57403/1-A	Method Blank	Total/NA	Water	505	
LLCS 810-57403/2-A	Lab Control Sample	Total/NA	Water	505	
LLCS 810-57403/3-A	Lab Control Sample	Total/NA	Water	505	
810-60588-I-3-A MS	Matrix Spike	Total/NA	Water	505	
810-60588-J-1-A MS	Matrix Spike	Total/NA	Water	505	
810-60433-K-1-A DU	Duplicate	Total/NA	Water	505	

Analysis Batch: 57488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	505	57403
MB 810-57403/1-A	Method Blank	Total/NA	Water	505	57403
LLCS 810-57403/2-A	Lab Control Sample	Total/NA	Water	505	57403
LLCS 810-57403/3-A	Lab Control Sample	Total/NA	Water	505	57403
810-60588-I-3-A MS	Matrix Spike	Total/NA	Water	505	57403
810-60588-J-1-A MS	Matrix Spike	Total/NA	Water	505	57403
810-60433-K-1-A DU	Duplicate	Total/NA	Water	505	57403

HPLC/IC

Analysis Batch: 37377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	300.0	
MB 380-37377/4	Method Blank	Total/NA	Water	300.0	
LCS 380-37377/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 380-37377/8	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 380-37377/6	Lab Control Sample	Total/NA	Water	300.0	
380-44250-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
380-44250-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

QC Association Summary

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

Job ID: 380-44261-1

HPLC/IC

Analysis Batch: 37378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	300.0	
MB 380-37378/4	Method Blank	Total/NA	Water	300.0	
LCS 380-37378/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 380-37378/8	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 380-37378/5	Lab Control Sample	Total/NA	Water	300.0	
MRL 380-37378/6	Lab Control Sample	Total/NA	Water	300.0	
380-44250-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
380-44250-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 37778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	300.0	
MB 380-37778/4	Method Blank	Total/NA	Water	300.0	
LCS 380-37778/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 380-37778/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 380-37778/3	Lab Control Sample	Total/NA	Water	300.0	
380-44421-F-1 MS	Matrix Spike	Total/NA	Water	300.0	
380-44421-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 37417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total Recoverable	Drinking Water	200.8	
MB 380-37417/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 380-37417/3-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 380-37417/4-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
LLCS 380-37417/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
380-44178-AA-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	
380-44178-AA-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 37574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total Recoverable	Drinking Water	200.8	37417
MB 380-37417/1-A	Method Blank	Total Recoverable	Water	200.8	37417
LCS 380-37417/3-A	Lab Control Sample	Total Recoverable	Water	200.8	37417
LCSD 380-37417/4-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	37417
LLCS 380-37417/2-A	Lab Control Sample	Total Recoverable	Water	200.8	37417
380-44178-AA-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	37417
380-44178-AA-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	37417

Analysis Batch: 37824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	200.7 Rev 4.4	
MB 380-37824/17	Method Blank	Total/NA	Water	200.7 Rev 4.4	
LCS 380-37824/19	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
LCSD 380-37824/20	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	
LLCS 380-37824/18	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
380-44593-H-1 MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	
380-44593-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	

QC Association Summary

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

Job ID: 380-44261-1

Metals

Analysis Batch: 38079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 380-37417/1-A	Method Blank	Total Recoverable	Water	200.8	37417
MB 380-38079/22	Method Blank	Total/NA	Water	200.8	
LCS 380-37417/3-A	Lab Control Sample	Total Recoverable	Water	200.8	37417
LCSD 380-37417/4-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	37417
LLCS 380-37417/2-A	Lab Control Sample	Total Recoverable	Water	200.8	37417
LLCS 380-38079/21	Lab Control Sample	Total/NA	Water	200.8	
380-44178-AA-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	37417
380-44178-AA-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	37417

Prep Batch: 56865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	245.1	
MB 810-56865/1-A	Method Blank	Total/NA	Water	245.1	
LCS 810-56865/3-A	Lab Control Sample	Total/NA	Water	245.1	
LLCS 810-56865/2-A	Lab Control Sample	Total/NA	Water	245.1	
810-60803-B-1-B MS	Matrix Spike	Total/NA	Water	245.1	
810-60803-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Analysis Batch: 56889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	245.1	56865
MB 810-56865/1-A	Method Blank	Total/NA	Water	245.1	56865
LCS 810-56865/3-A	Lab Control Sample	Total/NA	Water	245.1	56865
LLCS 810-56865/2-A	Lab Control Sample	Total/NA	Water	245.1	56865
810-60803-B-1-B MS	Matrix Spike	Total/NA	Water	245.1	56865
810-60803-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	56865

General Chemistry

Analysis Batch: 37509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	SM 2540C	
MB 380-37509/1	Method Blank	Total/NA	Water	SM 2540C	
HLCS 380-37509/5	Lab Control Sample	Total/NA	Water	SM 2540C	
LCS 380-37509/4	Lab Control Sample	Total/NA	Water	SM 2540C	
MRL 380-37509/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MRL 380-37509/3	Lab Control Sample	Total/NA	Water	SM 2540C	
380-44443-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 37601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	SM 4500 S2 D	
MB 380-37601/1	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 380-37601/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
LCSD 380-37601/11	Lab Control Sample Dup	Total/NA	Water	SM 4500 S2 D	
MRL 380-37601/10	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
MRL 380-37601/2	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
380-44261-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	SM 4500 S2 D	
380-44261-1 MSD	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	SM 4500 S2 D	

QC Association Summary

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

Job ID: 380-44261-1

General Chemistry

Analysis Batch: 37852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	SM 4500 F C	
MB 380-37852/40	Method Blank	Total/NA	Water	SM 4500 F C	
MB 380-37852/6	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 380-37852/42	Lab Control Sample	Total/NA	Water	SM 4500 F C	
LCSD 380-37852/43	Lab Control Sample Dup	Total/NA	Water	SM 4500 F C	
MRL 380-37852/41	Lab Control Sample	Total/NA	Water	SM 4500 F C	
MRL 380-37852/7	Lab Control Sample	Total/NA	Water	SM 4500 F C	
380-44044-A-2 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
380-44044-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 37853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	SM 2320B	
MB 380-37853/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 380-37853/3	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 380-37853/18	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
LLCS 380-37853/4	Lab Control Sample	Total/NA	Water	SM 2320B	
MRL 380-37853/2	Lab Control Sample	Total/NA	Water	SM 2320B	
380-44451-I-1 MS	Matrix Spike	Total/NA	Water	SM 2320B	
380-44451-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 2320B	
380-44451-I-1 DU	Duplicate	Total/NA	Water	SM 2320B	

Analysis Batch: 37856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	SM 2510B	
MB 380-37856/2	Method Blank	Total/NA	Water	SM 2510B	
LCS 380-37856/4	Lab Control Sample	Total/NA	Water	SM 2510B	
LCSD 380-37856/16	Lab Control Sample Dup	Total/NA	Water	SM 2510B	
MRL 380-37856/3	Lab Control Sample	Total/NA	Water	SM 2510B	
380-44451-I-1 DU	Duplicate	Total/NA	Water	SM 2510B	

Analysis Batch: 37858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	SM 4500 H+ B	
MB 380-37858/4	Method Blank	Total/NA	Water	SM 4500 H+ B	
LCS 380-37858/5	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSD 380-37858/17	Lab Control Sample Dup	Total/NA	Water	SM 4500 H+ B	
380-44451-I-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Subcontract

Analysis Batch: O-41042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	625 Acid/Base/PAH + TICs	O-41042_P
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	625 Acid/Base/PAH + TICs	O-41042_P
105222-B1	Method Blank	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-41042_P

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-44261-1

Subcontract (Continued)

Analysis Batch: O-41042 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
105222-B1	Method Blank	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-41042_P
105222-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-41042_P
105222-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-41042_P
105222-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-41042_P
105222-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-41042_P

Analysis Batch: 23DSD033W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSD033WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSD033WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5D033WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8D033WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 23MED004W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 Ethanol	
23MED004WB	Method Blank	Total/NA	WATER	8015 Ethanol	
23MED004WL	Lab Control Sample	Total/NA	WATER	8015 Ethanol	

Analysis Batch: 23VG39D12

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-44261-2	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39D12B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39D12L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

QC Association Summary

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

Job ID: 380-44261-1

Subcontract

Prep Batch: O-41042_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA_625	
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA_625	
105222-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
105222-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
105222-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
105222-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
105222-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	
105222-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-44261-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-44261-1

Date Collected: 04/18/23 10:00

Matrix: Drinking Water

Date Received: 04/19/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	38074	UKCP	EA POM	04/26/23 14:38
Total/NA	Analysis	524.2		1	38318	N1R	EA POM	04/28/23 12:50
Total/NA	Analysis	524.2		1	38220	Q6AD	EA POM	04/27/23 19:16
Total/NA	Prep	525.2			57414	SC	EA SB	05/02/23 08:16
Total/NA	Analysis	525.2 LL		1	57529	BC	EA SB	05/03/23 00:42
Total/NA	Prep	504.1			37791	K9GY	EA POM	04/25/23 13:05 - 04/25/23 14:11 ¹
Total/NA	Analysis	504.1		1	38045	K9GY	EA POM	04/26/23 05:35
Total/NA	Prep	505			57403	EZ	EA SB	05/02/23 09:25 - 05/02/23 15:39 ¹
Total/NA	Analysis	505		1	57488	JV	EA SB	05/03/23 06:46
Total/NA	Analysis	300.0		2	37377	VB9B	EA POM	04/20/23 00:01
Total/NA	Analysis	300.0		2	37378	VB9B	EA POM	04/20/23 00:01
Total/NA	Analysis	300.0		1	37778	UNJR	EA POM	04/21/23 10:00
Total/NA	Analysis	200.7 Rev 4.4		1	37824	T8RV	EA POM	04/24/23 21:18
Total Recoverable	Prep	200.8			37417	Z45W	EA POM	04/20/23 12:18
Total Recoverable	Analysis	200.8		1	37574	AAE8	EA POM	04/20/23 19:47
Total/NA	Prep	245.1			56865	AC	EA SB	04/26/23 18:55
Total/NA	Analysis	245.1		1	56889	AC	EA SB	04/26/23 23:08
Total/NA	Analysis	SM 2320B		1	37853	D5MQ	EA POM	04/24/23 16:20
Total/NA	Analysis	SM 2510B		1	37856	D5MQ	EA POM	04/24/23 16:20
Total/NA	Analysis	SM 2540C		1	37509	XLG4	EA POM	04/20/23 22:37
Total/NA	Analysis	SM 4500 F C		1	37852	D5MQ	EA POM	04/24/23 18:55
Total/NA	Analysis	SM 4500 H+ B		1	37858	D5MQ	EA POM	04/24/23 16:20
Total/NA	Analysis	SM 4500 S2 D		1	37601	MH2L	EA POM	04/21/23 14:25
Total/NA	Prep	EPA_625		1	O-41042_P			04/20/23 00:00
Total/NA	Analysis	625 Acid/Base/PAH + TICs		1	O-41042_YC			05/05/23 11:10
Total/NA	Prep	EPA_625		1	O-41042_P			04/20/23 00:00
Total/NA	Analysis	625 Acid/Base/PAH + TICs		1	O-41042_YC			05/11/23 19:27
Total/NA	Analysis	8015 Ethanol		1	23MED004W	ASitu		04/21/23 15:00
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39D12	SCerva		04/25/23 14:27
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSD033W	SDees		04/28/23 18:49

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-44261-2

Date Collected: 04/18/23 10:00

Matrix: Water

Date Received: 04/19/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	38074	UKCP	EA POM	04/26/23 14:59
Total/NA	Analysis	524.2		1	38318	N1R	EA POM	04/28/23 12:50
Total/NA	Analysis	524.2		1	38220	Q6AD	EA POM	04/27/23 19:39

Eurofins Eaton Analytical Pomona

Lab Chronicle

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

Job ID: 380-44261-1

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-44261-2

Date Collected: 04/18/23 10:00

Matrix: Water

Date Received: 04/19/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	504.1			37791	K9GY	EA POM	04/25/23 13:05 - 04/25/23 14:11 ¹
Total/NA	Analysis	504.1		1	38045	K9GY	EA POM	04/26/23 06:16
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39D12	SCerva		04/25/23 16:17

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

- = Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806
- EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100
- EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777



Accreditation/Certification Summary

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

Job ID: 380-44261-1

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	02-29-24

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

Analysis Method	Prep Method	Matrix	Analyte
200.7 Rev 4.4		Drinking Water	Calcium
200.7 Rev 4.4		Drinking Water	Magnesium
200.7 Rev 4.4		Drinking Water	Potassium
200.7 Rev 4.4		Drinking Water	Sodium
300.0		Drinking Water	Bromide
300.0		Drinking Water	Nitrite as N
524.2		Drinking Water	1,1,1,2-Tetrachloroethane
524.2		Drinking Water	1,1,2,2-Tetrachloroethane
524.2		Drinking Water	1,1-Dichloroethane
524.2		Drinking Water	1,1-Dichloropropene
524.2		Drinking Water	1,2,3-Trichlorobenzene
524.2		Drinking Water	1,2,3-Trichloropropane
524.2		Drinking Water	1,2,4-Trimethy benzene
524.2		Drinking Water	1,3,5-Trimethy benzene
524.2		Drinking Water	1,3-Dichloropropane
524.2		Drinking Water	1,3-Dichloropropene, Total
524.2		Drinking Water	2,2-Dichloropropane
524.2		Drinking Water	2-Butanone (MEK)
524.2		Drinking Water	4-Methyl-2-pentanone (MIBK)
524.2		Drinking Water	Acetone
524.2		Drinking Water	Bromobenzene
524.2		Drinking Water	Bromochloromethane
524.2		Drinking Water	Bromodichloromethane
524.2		Drinking Water	Bromoethane
524.2		Drinking Water	Bromoform
524.2		Drinking Water	Bromomethane (Methyl Bromide)
524.2		Drinking Water	Carbon disulfide
524.2		Drinking Water	Chlorodibromomethane
524.2		Drinking Water	Chloroethane
524.2		Drinking Water	Chloroform (Trichloromethane)
524.2		Drinking Water	Chloromethane (methyl chloride)
524.2		Drinking Water	cis-1,3-Dichloropropene
524.2		Drinking Water	Dibromomethane
524.2		Drinking Water	Dichlorodifluoromethane
524.2		Drinking Water	Diisopropyl ether
524.2		Drinking Water	Hexachlorobutadiene
524.2		Drinking Water	Isopropy benzene
524.2		Drinking Water	m,p-Xylenes
524.2		Drinking Water	m-Dichlorobenzene (1,3-DCB)
524.2		Drinking Water	Naphthalene
524.2		Drinking Water	n-Butylbenzene
524.2		Drinking Water	N-Propylbenzene
524.2		Drinking Water	o-Chlorotoluene
524.2		Drinking Water	o-Xylene
524.2		Drinking Water	p-Chlorotoluene

Accreditation/Certification Summary

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

Job ID: 380-44261-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date
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
524.2		Drinking Water	p-Isopropyltoluene
524.2		Drinking Water	sec-Butylbenzene
524.2		Drinking Water	tert-Butylbenzene
524.2		Drinking Water	Tertiary Butyl Alcohol (TBA)
524.2		Drinking Water	trans-1,3-Dichloropropene
524.2		Water	1,1,1,2-Tetrachloroethane
524.2		Water	1,1,2,2-Tetrachloroethane
524.2		Water	1,1-Dichloroethane
524.2		Water	1,1-Dichloropropene
524.2		Water	1,2,3-Trichlorobenzene
524.2		Water	1,2,3-Trichloropropane
524.2		Water	1,2,4-Trimethy benzene
524.2		Water	1,3,5-Trimethy benzene
524.2		Water	1,3-Dichloropropane
524.2		Water	1,3-Dichloropropene, Total
524.2		Water	2,2-Dichloropropane
524.2		Water	2-Butanone (MEK)
524.2		Water	4-Methyl-2-pentanone (MIBK)
524.2		Water	Acetone
524.2		Water	Bromobenzene
524.2		Water	Bromochloromethane
524.2		Water	Bromodichloromethane
524.2		Water	Bromoethane
524.2		Water	Bromoform
524.2		Water	Bromomethane (Methyl Bromide)
524.2		Water	Carbon disulfide
524.2		Water	Chlorodibromomethane
524.2		Water	Chloroethane
524.2		Water	Chloroform (Trichloromethane)
524.2		Water	Chloromethane (methyl chloride)
524.2		Water	cis-1,3-Dichloropropene
524.2		Water	Dibromomethane
524.2		Water	Dichlorodifluoromethane
524.2		Water	Diisopropyl ether
524.2		Water	Hexachlorobutadiene
524.2		Water	Isopropy benzene
524.2		Water	m,p-Xylenes
524.2		Water	m-Dichlorobenzene (1,3-DCB)
524.2		Water	Naphthalene
524.2		Water	n-Butylbenzene
524.2		Water	N-Propylbenzene
524.2		Water	o-Chlorotoluene
524.2		Water	o-Xylene
524.2		Water	p-Chlorotoluene
524.2		Water	p-Isopropyltoluene
524.2		Water	sec-Butylbenzene
524.2		Water	tert-Butylbenzene

Accreditation/Certification Summary

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

Job ID: 380-44261-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date
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
524.2		Water	Tertiary Butyl Alcohol (TBA)
524.2		Water	trans-1,3-Dichloropropene
SM 4500 F C		Drinking Water	Fluoride
SM 4500 S2 D		Drinking Water	Sulfide

Laboratory: Eurofins Eaton Analytical South Bend

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

Authority	Program	Identification Number	Expiration Date
A2LA	ISO/IEC 17025	5794.01	07-31-24
Alabama	State	40700	06-30-23
Alaska	State	IN00035	06-30-23
Arizona	State	AZ0432	07-25-23
Arkansas (DW)	State	EPA IN00035	06-30-23
California	State	2920	06-30-23
Colorado	State	IN00035	02-29-24
Connecticut	State	PH-0132	03-31-22 *
Delaware (DW)	State	IN00035	06-30-23
Florida	NELAP	E87775	06-30-23
Georgia (DW)	State	929	06-30-23
Hawaii	State	IN035	06-30-23
Idaho (DW)	State	IN00035	12-31-23
IL Dept. of Public Health (Micro)	State	17767	06-30-23
Illinois	NELAP	200001	09-30-23
Indiana	State	C-71-01	12-31-25
Indiana (Micro)	State	M-76-07	12-31-25
Iowa	State	IA Lab #098	11-01-23
Kansas	NELAP	E-10233	10-31-23
Kentucky (DW)	State	KY90056	12-31-23
Louisiana (DW)	State	LA014	12-31-23
Maine	State	IN00035	05-01-25
Maryland	State	209	05-18-23
Massachusetts	State	M-IN035	06-30-23
MI - RadChem Recognition	State	9926	06-30-23
Michigan	State	9926	06-30-23
Minnesota	NELAP	1989807	12-31-23
Mississippi	State	IN00035	06-30-23
Missouri	State	880	09-30-24
Montana (DW)	State	CERT0026	01-02-24
Nebraska	State	NE-OS-05-04	06-30-23
Nevada	State	IN000352021-2	07-31-23
New Hampshire	NELAP	2124	11-05-23
New Jersey	NELAP	IN598	06-30-23
New Mexico	State	IN00035	06-30-23
New York	NELAP	11398	04-01-24
North Carolina (DW)	State	18700	07-31-23
North Dakota	State	R-035	06-30-23

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

Accreditation/Certification Summary

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

Job ID: 380-44261-1

Laboratory: Eurofins Eaton Analytical South Bend (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
Ohio	State	87775	06-30-23
Oklahoma	NELAP	D9508	08-31-23
Oregon	NELAP	4156	09-16-23
Pennsylvania	NELAP	68-00466	04-30-24
Puerto Rico	State	IN00035	04-01-24
Rhode Island	State	LAO00343	12-30-23
South Carolina	State	95005001	06-30-23
South Dakota (DW)	State	IN00035	06-30-23
Tennessee	State	TN02973	06-30-23
Texas	NELAP	T104704187-22-16	12-31-23
Texas	TCEQ Water Supply	TX207	06-30-23
USEPA Reg X SDWA	US Federal Programs	IN00035	08-24-24
USEPA UCMR 5	US Federal Programs	IN00035	12-31-25
Utah	NELAP	IN00035	07-31-23
Vermont	State	VT-8775	11-15-23
Virginia	NELAP	460275	03-14-24
Washington	State	C837	01-01-24
West Virginia (DW)	State	9927 C	12-31-23
Wisconsin	State	999766900	08-31-23
Wisconsin (Micro)	State	10121	12-31-22 *
Wyoming	State	8TMS-L	06-30-23

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



Method Summary

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

Job ID: 380-44261-1

Method	Method Description	Protocol	Laboratory
524.2	Total Trihalomethanes	EPA-DW	EA POM
524.2	Volatile Organic Compounds (GC/MS SIM)	EPA-DW	EA POM
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	EA POM
525.2 LL	Semivolatile Organic Compounds (GC/MS)	EPA	EA SB
504.1	EDB, DBCP and 1,2,3-TCP (GC)	EPA-DW2	EA POM
505	Organochlorine Pesticides/PCBs (GC)	EPA	EA SB
300.0	Anions, Ion Chromatography	EPA	EA POM
200.7 Rev 4.4	Metals (ICP)	EPA	EA POM
200.8	Metals (ICP/MS)	EPA	EA POM
245.1	Mercury (CVAA)	EPA	EA SB
SM 2320B	Alkalinity	SM	EA POM
SM 2510B	Conductivity, Specific Conductance	SM	EA POM
SM 2540C	Solids, Total Dissolved (TDS)	SM	EA POM
SM 4500 F C	Fluoride	SM	EA POM
SM 4500 H+ B	pH	SM	EA POM
SM 4500 S2 D	Sulfide, Total	SM	EA POM
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	
200.8	Preparation, Total Recoverable Metals	EPA	EA POM
245.1	Preparation, Mercury	EPA	EA SB
504.1	Microextraction	EPA-DW	EA POM
505	Extraction, Organochlorine Pesticides/PCBs	EPA	EA SB
525.2	Extraction of Semivolatile Compounds	EPA	EA SB
None	Autocomplete Prep - Metals - No Digestion required	None	EA POM

Protocol References:

EPA = US Environmental Protection Agency

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

EPA-DW2 = "Methods For The Determination of Organic Compounds in Drinking Water - Supplement III ", EPA/600/R-95-131, August 1995

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

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

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

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Sample Summary

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

Job ID: 380-44261-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-44261-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	04/18/23 10:00	04/19/23 10:15	HI0000331
380-44261-2	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Water	04/18/23 10:00	04/19/23 10:15	

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

Date: 06-28-2023
EMAX Batch No.: 23D234

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-44261

Enclosed is the Laboratory report for samples received on 04/20/23.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-44261-1	D234-01	04/18/23	WATER	TPH GASOLINE TPH ETHANOL
380-44261-2	D234-02	04/18/23	WATER	TPH GASOLINE
380-44261-1MS	D234-01M	04/18/23	WATER	TPH JP-8
380-44261-1MSD	D234-01S	04/18/23	WATER	TPH JP-8

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
Caspar J. Pang
Laboratory Director

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

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

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



Chain of Custody Record

23D234



Environment Testing



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 Phone: _____ Email: _____ Project Name: RED-HILL Site: Honolulu BWS Sites		Lab PM: Arada, Rachelle E-Mail: Rachelle.Arada@et.eurofins.com State of Origin: Hawaii		Carrier Tracking No(s): 380-49048.1 Page: Page 1 of 1 Job #: 380-44261-1						
Due Date Requested: 5/3/2023 TAT Requested (days): _____ PO #: _____ WO #: _____ Project #: 38001111 SSOW#: _____		Accreditations Required (See note): State - Hawaii								
Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=soil, RT=Res, A=Air)	Field Filtered Sample (Yes or No)	Perform M/MSD (Yes or No)	Substrates (Yes or No)	Analysis Requested	Total Number of Containers	Special Instructions/Note:
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-44261-1)	4/18/23	10:00 Hawaiian	Water	Water	X	X	X		12	See Attached Instructions
TB/AIEA GULCH WELLS P2 (331-202-TP072) (380-44261-2)	4/18/23	10:00 Hawaiian	Water	Water		X	X		2	See Attached Instructions
Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/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 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: _____ Relinquished by: _____ Date/Time: 4/20/23 1055 Company: EMAX Relinquished by: _____ Date/Time: _____ Company: _____ Relinquished by: _____ Date/Time: _____ Company: _____ Cooler Temperature(s) °C and Other Remarks: 0.9 | 0.7 [CF: -0.2]										



Type of Delivery	Airbill / Tracking Number	ECN 23D234
<input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others		Recipient <u>Maria Rivera</u> <u>4/21/23</u> <u>Jhavin Zamora</u>
<input type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery		Date <u>04/20/23</u> Time <u>10:55</u>

COC INSPECTION

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

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition <u>correction</u>	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging <u>factor: -0.2</u>	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures	<input checked="" type="checkbox"/> Cooler 1 <u>0.9/0.7</u> °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
(Cool, ≤6 °C but not frozen)	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
Thermometer:	<u>A - S/N 221052768</u>	<u>B - S/N 210760237</u>	<u>C - S/N _____</u>
			<u>D - S/N _____</u>

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<u>2</u>	<u>13, 14</u>	<u>D22</u>	<u>2nd date reads: 2/28/23</u>	<u>R1</u>
<i>(Large handwritten scribble covering the rest of the table)</i>				

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. MB 4/21/23

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 checked="" 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 <u>Maria Rivera</u>	SRF <u>Cristina</u>	PM <u>MB</u>
Date <u>04/20/23</u>	Date <u>4/20/23</u>	Date <u>4/21/23</u>

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

380-44261

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

SDG#: 23D234



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-44261

SDG : 23D234

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

A total of two(2) water samples were received on 04/20/23 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VG39D12B - 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. VG39D12L/VG39D12C 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 D234-01M/D234-01S. 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.

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SAMPLE RESULTS

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 04/18/23 10:00
Project     : 380-44261                 Date Received: 04/20/23
Batch No.   : 23D234                   Date Extracted: 04/25/23 14:27
Sample ID   : 380-44261-1              Date Analyzed: 04/25/23 14:27
Lab Samp ID: D234-01                   Dilution Factor: 1
Lab File ID: ED25008A                  Matrix: WATER
Ext Btch ID: 23VG39D12                 % Moisture: NA
Calib. Ref.: ED25004A                  Instrument ID: 39
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
-----	-----	-----	-----	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
-----	-----	-----	-----	-----
Bromofluorobenzene	0.0369	0.0400	92	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: 04/18/23 10:00
Project	: 380-44261	Date Received: 04/20/23
Batch No.	: 23D234	Date Extracted: 04/25/23 16:17
Sample ID	: 380-44261-2	Date Analyzed: 04/25/23 16:17
Lab Samp ID:	D234-02	Dilution Factor: 1
Lab File ID:	ED25011A	Matrix: WATER
Ext Btch ID:	23VG39D12	% Moisture: NA
Calib. Ref.:	ED25004A	Instrument ID: 39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0349	0.0400	87	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: 04/25/23 12:38
Project : 380-44261	Date Received: 04/25/23
Batch No. : 23D234	Date Extracted: 04/25/23 12:38
Sample ID : MBLK1W	Date Analyzed: 04/25/23 12:38
Lab Samp ID: VG39D12B	Dilution Factor: 1
Lab File ID: ED25005A	Matrix: WATER
Ext Btch ID: 23VG39D12	% Moisture: NA
Calib. Ref.: ED25004A	Instrument ID: 39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0368	0.0400	92	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 : 380-44261
BATCH NO. : 23D234
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39D12B	VG39D12L	VG39D12C
LAB FILE ID	: ED25005A	ED25006A	ED25007A
DATE PREPARED	: 04/25/23 12:38	04/25/23 13:14	04/25/23 13:51
DATE ANALYZED	: 04/25/23 12:38	04/25/23 13:14	04/25/23 13:51
PREP BATCH	: 23VG39D12	23VG39D12	23VG39D12
CALIBRATION REF:	ED25004A	ED25004A	ED25004A

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	0.508	102	0.500	0.506	101	0	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0466	117	0.0400	0.0478	120	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 : 380-44261
BATCH NO. : 23D234
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-44261-1	380-44261-1MS	380-44261-1MSD
LAB SAMPLE ID	: D234-01	D234-01M	D234-01S
LAB FILE ID	: ED25008A	ED25009A	ED25010A
DATE PREPARED	: 04/25/23 14:27	04/25/23 15:05	04/25/23 15:41
DATE ANALYZED	: 04/25/23 14:27	04/25/23 15:05	04/25/23 15:41
PREP BATCH	: 23VG39D12	23VG39D12	23VG39D12
CALIBRATION REF:	ED25004A	ED25004A	ED25004A

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	0.461	92	0.500	0.474	95	3	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0456	114	0.0400	0.0456	114	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-44261

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23D234



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-44261

SDG : 23D234

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 04/20/23 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSD033WB - 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) LCS was analyzed. Percent recovery for Diesel was within LCS QC limits in DSD033WL. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Diesel was within MS QC limits in 23D232-01M/23D232-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-44261

SDG : 23D234

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 04/20/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSD033WB - 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) LCS was analyzed. Percent recovery for JP5 was within LCS QC limits in J5D033WL. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. JP5 was within MS QC limits in 23D232-01M/23D232-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-44261

SDG : 23D234

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 04/20/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSD033WB - 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) LCS was analyzed. Percent recovery for JP8 was within LCS QC limits in J8D033WL. 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. JP8 was within MS QC limits in 23D234-01M/23D234-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

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SAMPLE RESULTS

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/18/23 10:00
Project	: 380-44261	Date Received:	04/20/23
Batch No.	: 23D234	Date Extracted:	04/27/23 14:30
Sample ID	: 380-44261-1	Date Analyzed:	04/28/23 18:49
Lab Samp ID:	23D234-01	Dilution Factor:	1
Lab File ID:	LD28019A	Matrix:	WATER
Ext Btch ID:	23DSD033W	% Moisture:	NA
Calib. Ref.:	LD28004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.051	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.388	0.510	76	60-130
Hexacosane	0.110	0.127	86	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 : 980ml

Final Volume : 5ml

Prepared by : JMuert

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/18/23 10:00
Project	: 380-44261	Date Received:	04/20/23
Batch No.	: 23D234	Date Extracted:	04/27/23 14:30
Sample ID	: 380-44261-1	Date Analyzed:	04/28/23 18:49
Lab Samp ID:	23D234-01	Dilution Factor:	1
Lab File ID:	LD28019A	Matrix:	WATER
Ext Btch ID:	23DSD033W	% Moisture:	NA
Calib. Ref.:	LD28005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.051	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.388	0.510	76	60-130
Hexacosane	0.110	0.127	86	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 : 980ml Final Volume : 5ml
 Prepared by : JMuert Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

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=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 04/27/23 14:30
Project     : 380-44261                   Date Received: 04/27/23
Batch No.   : 23D234                       Date Extracted: 04/27/23 14:30
Sample ID   : MBLK1W                       Date Analyzed: 04/28/23 15:42
Lab Samp ID: DSD033WB                      Dilution Factor: 1
Lab File ID: LD28009A                       Matrix: WATER
Ext Btch ID: 23DSD033W                     % Moisture: NA
Calib. Ref.: LD28003A                       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	0.364	0.500	73	60-130
Hexacosane	0.106	0.125	85	60-130

Notes:

```

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

```

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

```

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

```

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-44261
BATCH NO. : 23D234
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSD033WB DSD033WL
LAB FILE ID : LD28009A LD28010A
DATE PREPARED : 04/27/23 14:30 04/27/23 14:30
DATE ANALYZED : 04/28/23 15:42 04/28/23 16:01
PREP BATCH : 23DSD033W 23DSD033W
CALIBRATION REF: LD28003A LD28003A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
----- Diesel	ND	2.50	2.26	90	50-130

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
----- Bromobenzene	0.500	0.331	66	60-130
Hexacosane	0.125	0.113	90	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-44256
BATCH NO. : 23D232
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-44256-1	380-44256-1MS	380-44256-1MSD
LAB SAMPLE ID	: 23D232-01	23D232-01M	23D232-01S
LAB FILE ID	: LD28013A	LD28014A	LD28015A
DATE PREPARED	: 04/27/23 14:30	04/27/23 14:30	04/27/23 14:30
DATE ANALYZED	: 04/28/23 16:57	04/28/23 17:16	04/28/23 17:34
PREP BATCH	: 23DSD033W	23DSD033W	23DSD033W
CALIBRATION REF:	LD28003A	LD28003A	LD28003A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.72	2.39	88	2.62	2.45	93	2	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.545	0.379	70	0.525	0.388	74	60-130
Hexacosane	0.136	0.129	95	0.131	0.118	90	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/27/23 14:30
Project	: 380-44261	Date Received:	04/27/23
Batch No.	: 23D234	Date Extracted:	04/27/23 14:30
Sample ID	: MBLK1W	Date Analyzed:	04/28/23 15:42
Lab Samp ID:	DSD033WB	Dilution Factor:	1
Lab File ID:	LD28009A	Matrix:	WATER
Ext Btch ID:	23DSD033W	% Moisture:	NA
Calib. Ref.:	LD28004A	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	0.364	0.500	73	60-130
Hexacosane	0.106	0.125	85	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml

Final Volume : 5ml

Prepared by : JMuert

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-44261
BATCH NO. : 23D234
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSD033WB J5D033WL
LAB FILE ID : LD28009A LD28011A
DATE PREPARED : 04/27/23 14:30 04/27/23 14:30
DATE ANALYZED : 04/28/23 15:42 04/28/23 16:20
PREP BATCH : 23DSD033W 23DSD033W
CALIBRATION REF: LD28004A LD28004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP5	ND	2.50	2.23	89	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.362	72	60-130
Hexacosane	0.125	0.0986	79	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-44256
BATCH NO. : 23D232
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-44256-1	380-44256-1MS	380-44256-1MSD
LAB SAMPLE ID	: 23D232-01	23D232-01M	23D232-01S
LAB FILE ID	: LD28013A	LD28016A	LD28017A
DATE PREPARED	: 04/27/23 14:30	04/27/23 14:30	04/27/23 14:30
DATE ANALYZED	: 04/28/23 16:57	04/28/23 17:53	04/28/23 18:12
PREP BATCH	: 23DSD033W	23DSD033W	23DSD033W
CALIBRATION REF:	LD28004A	LD28004A	LD28004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.58	2.91	113	2.53	2.92	116	0	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.515	0.442	86	0.505	0.436	86	60-130
Hexacosane	0.129	0.107	83	0.126	0.105	83	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/27/23 14:30
Project	: 380-44261	Date Received:	04/27/23
Batch No.	: 23D234	Date Extracted:	04/27/23 14:30
Sample ID	: MBLK1W	Date Analyzed:	04/28/23 15:42
Lab Samp ID:	DSD033WB	Dilution Factor:	1
Lab File ID:	LD28009A	Matrix:	WATER
Ext Btch ID:	23DSD033W	% Moisture:	NA
Calib. Ref.:	LD28005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.364	0.500	73	60-130
Hexacosane	0.106	0.125	85	60-130

Notes:

RL : Reporting Limit
 Parameter H-C Range
 JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-44261
BATCH NO. : 23D234
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSD033WB J8D033WL
LAB FILE ID : LD28009A LD28012A
DATE PREPARED : 04/27/23 14:30 04/27/23 14:30
DATE ANALYZED : 04/28/23 15:42 04/28/23 16:38
PREP BATCH : 23DSD033W 23DSD033W
CALIBRATION REF: LD28005A LD28005A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP8	ND	2.50	2.65	106	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.485	97	60-130
Hexacosane	0.125	0.100	80	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-44261
BATCH NO. : 23D234
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-44261-1	380-44261-1MS	380-44261-1MSD
LAB SAMPLE ID	: 23D234-01	23D234-01M	23D234-01S
LAB FILE ID	: LD28019A	LD28020A	LD28021A
DATE PREPARED	: 04/27/23 14:30	04/27/23 14:30	04/27/23 14:30
DATE ANALYZED	: 04/28/23 18:49	04/28/23 19:07	04/28/23 19:26
PREP BATCH	: 23DSD033W	23DSD033W	23DSD033W
CALIBRATION REF:	LD28005A	LD28005A	LD28005A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.53	2.03	80	2.58	2.65	103	26	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.505	0.379	75	0.515	0.493	96	60-130
Hexacosane	0.126	0.117	93	0.129	0.113	88	60-130

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-44261

METHOD SW8015C
ALCOHOLS BY GC

SDG#: 23D234



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-44261

SDG : 23D234

METHOD SW8015C
ALCOHOLS BY GC

One(1) water sample was received on 04/20/23 to be analyzed for Alcohols by GC in accordance with Method SW8015C 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.

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. MED004WL/MED004WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG. Ethanol was within MS QC limits in D232-01M/D232-01S. Refer to Matrix QC summary form 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
ALCOHOLS BY GC

SDG NO. : 23D234
Instrument ID : GCT050

Client : EUROFINS EATON ANALYTICAL
Project : 380-44261

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	MED004WB	1	NA	04/21/2313:13	NA	TD21004A	TD21002A	MED004W	Method Blank
LCS1W	MED004WL	1	NA	04/21/2313:26	NA	TD21005A	TD21002A	MED004W	Lab Control Sample (LCS)
LC01W	MED004WC	1	NA	04/21/2313:39	NA	TD21006A	TD21002A	MED004W	LCS Duplicate
380-44261-1	D234-01	1	NA	04/21/2315:00	NA	TD21010A	TD21002A	MED004W	Field Sample

FN - Filename
% Moist - Percent Moisture



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SAMPLE RESULTS

METHOD SW8015C
ALCOHOLS BY GC

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	04/18/23
Project	: 380-44261	Date Received:	04/20/23
Batch No.	: 23D234	Date Extracted:	NA
Sample ID:	380-44261-1	Date Analyzed:	04/21/23 15:00
Lab Samp ID:	D234-01	Dilution Factor:	1
Lab File ID:	TD21010A	Matrix	: WATER
Ext Btch ID:	MED004W	% Moisture	: NA
Calib. Ref.:	TD21002A	Instrument ID	: GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
-----	-----	-----	-----
ETHANOL	ND	2000	500

RL : Reporting Limit



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QC SUMMARIES

METHOD SW8015C
ALCOHOLS BY GC

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	NA
Project	: 380-44261	Date Received:	NA
Batch No.	: 23D234	Date Extracted:	NA
Sample ID:	MBLK1W	Date Analyzed:	04/21/23 13:13
Lab Samp ID:	MED004WB	Dilution Factor:	1
Lab File ID:	TD21004A	Matrix	: WATER
Ext Btch ID:	MED004W	% Moisture	: NA
Calib. Ref.:	TD21002A	Instrument ID	: GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
.....
ETHANOL	ND	2000	500

RL : Reporting Limit



EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: EUROFINS EATON ANALYTICAL
PROJECT: 380-44261
BATCH NO.: 23D234
METHOD: METHOD SW8015C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: MED004WB MED004WL MED004WC
LAB FILE ID: TD21004A TD21005A TD21006A
DATE EXTRACTED: NA NA NA DATE COLLECTED: NA
DATE ANALYZED: 04/21/2313:13 04/21/2313:26 04/21/2313:39 DATE RECEIVED: NA
PREP. BATCH: MED004W MED004W MED004W
CALIB. REF: TD21002A TD21002A TD21002A

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethanol	ND	10000	9310	93	10000	10500	105	12	60-130	30

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: EUROFINS EATON ANALYTICAL
PROJECT: 380-44256
BATCH NO.: 23D232
METHOD: METHOD SW8015C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: 380-44256-1
LAB SAMP ID: D232-01 D232-01M D232-01S
LAB FILE ID: TD21007A TD21008A TD21009A
DATE EXTRACTED: NA NA NA DATE COLLECTED: 04/18/23
DATE ANALYZED: 04/21/2314:00 04/21/2314:16 04/21/2314:46 DATE RECEIVED: 04/20/23
PREP. BATCH: MED004W MED004W MED004W
CALIB. REF: TD21002A TD21002A TD21002A

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethanol	ND	10000	10300	103	10000	9860	99	4	60-130	30

May 22, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-44261-1
 Physis Project ID: 1407003-397

Dear Rachelle,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 4/20/2023. A total of 1 sample was received for analysis in accordance with the attached chain of custody (COC). Per the COC, the sample was analyzed for:

Organics
Polynuclear Aromatic Hydrocarbons by EPA 625.1
Disalicylidenepropanediamine by EPA 625.1
Dibenzo [a,l] Pyrene w/ PAHs by EPA 625.1
Base/Neutral Extractable Compounds by EPA 625.1
Acid Extractable Compounds w/ PAHs by EPA 625.1
6-tert-Butyl-2,4-dimethylphenol by EPA 625.1
2,6-Di-tert-butylphenol by EPA 625.1
2,6-Di-tert-butyl-4-methylphenol by EPA 625.1
p-tert-Butylphenol by EPA 625.1

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

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

Regards,

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

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-397

RED-HILL Project # 38001111 Job # 380-44261-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
105223	AIEA GULCH WELLS PUMP	331-202-TP072 (380-44261-1)	4/18/2023	10:00	Samplewater	Not Specified

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ABBREVIATIONS and ACRONYMS

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

QUALITY ASSURANCE SUMMARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PHYSIS QUALIFIER CODES

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

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

BIANALYTICALS

REPORT

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Acid Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 105223-R1	AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater						Sampled: 18-Apr-23 10:00		Received:	20-Apr-23	
(2,4,6-Tribromophenol)	EPA 625.1	% Recovery	47	1			Total	O-41042	20-Apr-23	11-May-23	
(d5-Phenol)	EPA 625.1	% Recovery	17	1			Total	O-41042	20-Apr-23	11-May-23	
2,4,5-Trichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	11-May-23	
2,4,6-Trichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	11-May-23	
2,4-Dichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	11-May-23	
2,4-Dinitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
2,6-Dichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	11-May-23	
2,6-Di-tert-butyl-4-methylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	05-May-23	
2,6-Di-tert-butylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	05-May-23	
2-Chlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	11-May-23	
2-Methyl-4,6-dinitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
2-Methylphenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
2-Nitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
3+4-Methylphenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
4-Chloro-3-methylphenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
4-Nitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
6-tert-butyl-2,4-dimethylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	05-May-23	
Benzoic Acid	EPA 625.1	µg/L	0.297	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
Benzyl Alcohol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
Pentachlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	11-May-23	
Phenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total	O-41042	20-Apr-23	11-May-23	
p-tert-Butylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	20-Apr-23	05-May-23	

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 105223-R1	AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater						Sampled: 18-Apr-23 10:00		Received: 20-Apr-23		
2-Chloronaphthalene	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
2-Nitroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
3-Nitroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
4-Bromophenylphenyl ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
4-Chloroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
4-Chlorophenylphenyl ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
4-Nitroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
Aniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
Benzidine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
Bis(2-Chloroethoxy) methane	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
Bis(2-Chloroethyl) ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
Bis(2-Chloroisopropyl) ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
D benzofuran	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	05-May-23
Hexachloroethane	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
Nitrobenzene	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
N-Nitrosodi-n-propylamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23
N-Nitrosodiphenylamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total	O-41042	O-41042	20-Apr-23	11-May-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 105223-R1	AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater						Sampled: 18-Apr-23 10:00		Received: 20-Apr-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	42	1			Total		O-41042	20-Apr-23	05-May-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	70	1			Total		O-41042	20-Apr-23	05-May-23
(d12-Chrysene)	EPA 625.1	% Recovery	76	1			Total		O-41042	20-Apr-23	05-May-23
(d12-Perylene)	EPA 625.1	% Recovery	69	1			Total		O-41042	20-Apr-23	05-May-23
(d8-Naphthalene)	EPA 625.1	% Recovery	43	1			Total		O-41042	20-Apr-23	05-May-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41042	20-Apr-23	05-May-23



QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

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Acid Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	%	LIMITS	%
Sample ID: 105222-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-41042			Prepared: 13-Apr-23		Analyzed: 11-May-23				
(2,4,6-Tr bromophenol)	Total	50	1			% Recovery	100	50	30 - 130%	PASS	
(d5-Phenol)	Total	57	1			% Recovery	100	57	0 - 130%	PASS	
2,4,5-Trichlorophenol	Total	ND	1	0.05	0.1	µg/L					
2,4,6-Trichlorophenol	Total	ND	1	0.05	0.1	µg/L					
2,4-Dichlorophenol	Total	ND	1	0.05	0.1	µg/L					
2,4-Dinitrophenol	Total	ND	1	0.1	0.2	µg/L					
2,6-Dichlorophenol	Total	ND	1	0.05	0.1	µg/L					
2,6-Di-tert-butyl-4-methylphenol	Total	ND	1	0.05	0.1	µg/L					
2,6-Di-tert-butylphenol	Total	ND	1	0.05	0.1	µg/L					
2-Chlorophenol	Total	ND	1	0.05	0.1	µg/L					
2-Methyl-4,6-dinitrophenol	Total	ND	1	0.1	0.2	µg/L					
2-Methylphenol	Total	ND	1	0.1	0.2	µg/L					
2-Nitrophenol	Total	ND	1	0.1	0.2	µg/L					
3+4-Methylphenol	Total	ND	1	0.1	0.2	µg/L					
4-Chloro-3-methylphenol	Total	ND	1	0.1	0.2	µg/L					
4-Nitrophenol	Total	ND	1	0.1	0.2	µg/L					
6-tert-butyl-2,4-dimethylphenol	Total	ND	1	0.05	0.1	µg/L					
Benzoic Acid	Total	ND	1	0.1	0.2	µg/L					
Benzyl Alcohol	Total	ND	1	0.1	0.2	µg/L					
Pentachlorophenol	Total	ND	1	0.05	0.1	µg/L					
Phenol	Total	ND	1	0.1	0.2	µg/L					
p-tert-Butylphenol	Total	ND	1	0.05	0.1	µg/L					

Acid Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION	QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 105222-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-41042			Prepared: 13-Apr-23		Analyzed: 11-May-23					
(2,4,6-Tr bromophenol)	Total	54	1			% Recovery	100	0	54	30 - 130%	PASS	
(d5-Phenol)	Total	58	1			% Recovery	100	0	58	0 - 130%	PASS	
2,4,5-Trichlorophenol	Total	0.928	1	0.05	0.1	µg/L	1	0	93	30 - 130%	PASS	
2,4,6-Trichlorophenol	Total	0.914	1	0.05	0.1	µg/L	1	0	91	56 - 118%	PASS	
2,4-Dichlorophenol	Total	0.77	1	0.05	0.1	µg/L	1	0	77	51 - 117%	PASS	
2,4-Dinitrophenol	Total	1.07	1	0.1	0.2	µg/L	1	0	107	0 - 152%	PASS	
2,6-Dichlorophenol	Total	0.405	1	0.05	0.1	µg/L	1	0	41	30 - 130%	PASS	
2,6-Di-tert-butyl-4-methylphenol	Total	0.58	1	0.05	0.1	µg/L	1	0	58	50 - 150%	PASS	
2,6-Di-tert-butylphenol	Total	0.558	1	0.05	0.1	µg/L	1	0	56	50 - 150%	PASS	
2-Chlorophenol	Total	0.657	1	0.05	0.1	µg/L	1	0	66	41 - 110%	PASS	
2-Methyl-4,6-dinitrophenol	Total	0.999	1	0.1	0.2	µg/L	1	0	100	0 - 141%	PASS	
2-Methylphenol	Total	0.641	1	0.1	0.2	µg/L	1	0	64	40 - 117%	PASS	
2-Nitrophenol	Total	0.699	1	0.1	0.2	µg/L	1	0	70	40 - 117%	PASS	
3+4-Methylphenol	Total	0.81	1	0.1	0.2	µg/L	1	0	81	0 - 130%	PASS	
4-Chloro-3-methylphenol	Total	0.862	1	0.1	0.2	µg/L	1	0	86	51 - 128%	PASS	
4-Nitrophenol	Total	0.817	1	0.1	0.2	µg/L	1	0	82	10 - 164%	PASS	
6-tert-butyl-2,4-dimethylphenol	Total	0.508	1	0.05	0.1	µg/L	1	0	51	50 - 150%	PASS	
Benzoic Acid	Total	1.01	1	0.1	0.2	µg/L	1	0	101	2 - 145%	PASS	
Benzyl Alcohol	Total	0.79	1	0.1	0.2	µg/L	1	0	79	43 - 148%	PASS	
Pentachlorophenol	Total	0.954	1	0.05	0.1	µg/L	1	0	95	36 - 111%	PASS	
Phenol	Total	0.575	1	0.1	0.2	µg/L	1	0	57	29 - 114%	PASS	
p-tert-Butylphenol	Total	0.816	1	0.05	0.1	µg/L	1	0	82	50 - 150%	PASS	

Acid Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODEc	
									%	LIMITS	%	LIMITS		
Sample ID: 105222-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:				
Method: EPA 625.1		Batch ID: O-41042			Prepared: 13-Apr-23		Analyzed: 11-May-23							
(2,4,6-Tr bromophenol)	Total	54	1			% Recovery	100	0	54	30 - 130%	PASS	0	30	PASS
(d5-Phenol)	Total	64	1			% Recovery	100	0	64	0 - 130%	PASS	10	30	PASS
2,4,5-Trichlorophenol	Total	0.891	1	0.05	0.1	µg/L	1	0	89	30 - 130%	PASS	4	30	PASS
2,4,6-Trichlorophenol	Total	0.929	1	0.05	0.1	µg/L	1	0	93	56 - 118%	PASS	2	30	PASS
2,4-Dichlorophenol	Total	0.871	1	0.05	0.1	µg/L	1	0	87	51 - 117%	PASS	12	30	PASS
2,4-Dinitrophenol	Total	0.955	1	0.1	0.2	µg/L	1	0	95	0 - 152%	PASS	11	30	PASS
2,6-Dichlorophenol	Total	0.427	1	0.05	0.1	µg/L	1	0	43	30 - 130%	PASS	7	30	PASS
2,6-Di-tert-butyl-4-methylphenol	Total	0.585	1	0.05	0.1	µg/L	1	0	59	50 - 150%	PASS	2	30	PASS
2,6-Di-tert-butylphenol	Total	0.588	1	0.05	0.1	µg/L	1	0	59	50 - 150%	PASS	5	30	PASS
2-Chlorophenol	Total	0.715	1	0.05	0.1	µg/L	1	0	71	41 - 110%	PASS	9	30	PASS
2-Methyl-4,6-dinitrophenol	Total	0.941	1	0.1	0.2	µg/L	1	0	94	0 - 141%	PASS	6	30	PASS
2-Methylphenol	Total	0.718	1	0.1	0.2	µg/L	1	0	72	40 - 117%	PASS	12	30	PASS
2-Nitrophenol	Total	0.786	1	0.1	0.2	µg/L	1	0	79	40 - 117%	PASS	12	30	PASS
3+4-Methylphenol	Total	0.898	1	0.1	0.2	µg/L	1	0	90	0 - 130%	PASS	11	30	PASS
4-Chloro-3-methylphenol	Total	0.911	1	0.1	0.2	µg/L	1	0	91	51 - 128%	PASS	6	30	PASS
4-Nitrophenol	Total	0.846	1	0.1	0.2	µg/L	1	0	85	10 - 164%	PASS	4	30	PASS
6-tert-butyl-2,4-dimethylphenol	Total	0.566	1	0.05	0.1	µg/L	1	0	57	50 - 150%	PASS	11	30	PASS
Benzoic Acid	Total	0.919	1	0.1	0.2	µg/L	1	0	92	2 - 145%	PASS	9	30	PASS
Benzyl Alcohol	Total	0.912	1	0.1	0.2	µg/L	1	0	91	43 - 148%	PASS	14	30	PASS
Pentachlorophenol	Total	0.858	1	0.05	0.1	µg/L	1	0	86	36 - 111%	PASS	10	30	PASS
Phenol	Total	0.635	1	0.1	0.2	µg/L	1	0	63	29 - 114%	PASS	10	30	PASS
p-tert-Butylphenol	Total	1.04	1	0.05	0.1	µg/L	1	0	104	50 - 150%	PASS	8	30	PASS

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: 105222-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-41042		Prepared: 13-Apr-23		Analyzed: 11-May-23					
2-Chloronaphthalene	Total	ND	1	0.05	0.1	µg/L					
2-Nitroaniline	Total	ND	1	0.05	0.1	µg/L					
3-Nitroaniline	Total	ND	1	0.05	0.1	µg/L					
4-Bromophenylphenyl ether	Total	ND	1	0.05	0.1	µg/L					
4-Chloroaniline	Total	ND	1	0.05	0.1	µg/L					
4-Chlorophenylphenyl ether	Total	ND	1	0.05	0.1	µg/L					
4-Nitroaniline	Total	ND	1	0.05	0.1	µg/L					
Aniline	Total	ND	1	0.05	0.1	µg/L					
Benzidine	Total	ND	1	0.05	0.1	µg/L					
Bis(2-Chloroethoxy) methane	Total	ND	1	0.05	0.1	µg/L					
Bis(2-Chloroethyl) ether	Total	ND	1	0.05	0.1	µg/L					
Bis(2-Chloroisopropyl) ether	Total	ND	1	0.05	0.1	µg/L					
Dibenzofuran	Total	ND	1	0.05	0.1	µg/L					
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L					
Hexachloroethane	Total	ND	1	0.05	0.1	µg/L					
Nitrobenzene	Total	ND	1	0.05	0.1	µg/L					
N-Nitrosodi-n-propylamine	Total	ND	1	0.05	0.1	µg/L					
N-Nitrosodiphenylamine	Total	ND	1	0.05	0.1	µg/L					

Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODEc
									%	LIMITS	%	LIMITS	
Sample ID: 105222-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
Method: EPA 625.1		Batch ID: O-41042			Prepared: 13-Apr-23		Analyzed: 11-May-23						
2-Chloronaphthalene	Total	0.79	1	0.05	0.1	µg/L	1	0	79	53 - 130%	PASS		
2-Nitroaniline	Total	0.968	1	0.05	0.1	µg/L	1	0	97	69 - 114%	PASS		
3-Nitroaniline	Total	0.978	1	0.05	0.1	µg/L	1	0	98	23 - 137%	PASS		
4-Bromophenylphenyl ether	Total	0.53	1	0.05	0.1	µg/L	1	0	53	61 - 132%	PASS		
4-Chloroaniline	Total	0.512	1	0.05	0.1	µg/L	1	0	51	50 - 150%	PASS		
4-Chlorophenylphenyl ether	Total	0.848	1	0.05	0.1	µg/L	1	0	85	63 - 130%	PASS		
4-Nitroaniline	Total	0.99	1	0.05	0.1	µg/L	1	0	99	10 - 159%	PASS		
Aniline	Total	0.726	1	0.05	0.1	µg/L	1	0	73	50 - 150%	PASS		
Benzidine	Total	0	1	0.05	0.1	µg/L	1	0	0	0 - 125%	PASS		
Bis(2-Chloroethoxy) methane	Total	0.806	1	0.05	0.1	µg/L	1	0	81	66 - 122%	PASS		
Bis(2-Chloroethyl) ether	Total	0.59	1	0.05	0.1	µg/L	1	0	59	43 - 127%	PASS		
Bis(2-Chloroisopropyl) ether	Total	0.916	1	0.05	0.1	µg/L	1	0	92	49 - 128%	PASS		
Dibenzofuran	Total	0.837	1	0.05	0.1	µg/L	1	0	84	50 - 150%	PASS		
Disalicylidenepropanediamin	Total	40.4	1	0.05	0.1	µg/L	50	0	81	50 - 150%	PASS		
Hexachloroethane	Total	0.628	1	0.05	0.1	µg/L	1	0	63	27 - 130%	PASS		
Nitrobenzene	Total	0.734	1	0.05	0.1	µg/L	1	0	73	54 - 111%	PASS		
N-Nitrosodi-n-propylamine	Total	0.846	1	0.05	0.1	µg/L	1	0	85	61 - 152%	PASS		
N-Nitrosodiphenylamine	Total	0.927	1	0.05	0.1	µg/L	1	0	93	49 - 142%	PASS		

Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODEc	
									%	LIMITS	%	LIMITS		
Sample ID: 105222-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:				
Method: EPA 625.1		Batch ID: O-41042			Prepared: 13-Apr-23		Analyzed: 11-May-23							
2-Chloronaphthalene	Total	0.831	1	0.05	0.1	µg/L	1	0	83	53 - 130%	PASS	5	30	PASS
2-Nitroaniline	Total	1.02	1	0.05	0.1	µg/L	1	0	102	69 - 114%	PASS	5	30	PASS
3-Nitroaniline	Total	1.03	1	0.05	0.1	µg/L	1	0	103	23 - 137%	PASS	5	30	PASS
4-Bromophenylphenyl ether	Total	0.532	1	0.05	0.1	µg/L	1	0	53	61 - 132%	PASS	0	30	PASS
4-Chloroaniline	Total	0.675	1	0.05	0.1	µg/L	1	0	68	50 - 150%	PASS	29	30	PASS
4-Chlorophenylphenyl ether	Total	0.873	1	0.05	0.1	µg/L	1	0	87	63 - 130%	PASS	2	30	PASS
4-Nitroaniline	Total	1.02	1	0.05	0.1	µg/L	1	0	102	10 - 159%	PASS	3	30	PASS
Aniline	Total	0.792	1	0.05	0.1	µg/L	1	0	79	50 - 150%	PASS	8	30	PASS
Benzidine	Total	0	1	0.05	0.1	µg/L	1	0	0	0 - 125%	PASS	0	30	PASS
Bis(2-Chloroethoxy) methane	Total	0.894	1	0.05	0.1	µg/L	1	0	89	66 - 122%	PASS	9	30	PASS
Bis(2-Chloroethyl) ether	Total	0.649	1	0.05	0.1	µg/L	1	0	65	43 - 127%	PASS	10	30	PASS
Bis(2-Chloroisopropyl) ether	Total	0.854	1	0.05	0.1	µg/L	1	0	85	49 - 128%	PASS	8	30	PASS
Dibenzofuran	Total	0.878	1	0.05	0.1	µg/L	1	0	88	50 - 150%	PASS	5	30	PASS
Disalicylidenepropanediamin	Total	44.8	1	0.05	0.1	µg/L	50	0	90	50 - 150%	PASS	11	30	PASS
Hexachloroethane	Total	0.654	1	0.05	0.1	µg/L	1	0	65	27 - 130%	PASS	3	30	PASS
Nitrobenzene	Total	0.808	1	0.05	0.1	µg/L	1	0	81	54 - 111%	PASS	10	30	PASS
N-Nitrosodi-n-propylamine	Total	0.925	1	0.05	0.1	µg/L	1	0	93	61 - 152%	PASS	8	30	PASS
N-Nitrosodiphenylamine	Total	0.948	1	0.05	0.1	µg/L	1	0	95	49 - 142%	PASS	2	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: 105222-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-41042			Prepared: 13-Apr-23		Analyzed: 05-May-23					
(d10-Acenaphthene)	Total	73	1			% Recovery	100	73	27 - 133%	PASS		
(d10-Phenanthrene)	Total	76	1			% Recovery	100	76	43 - 129%	PASS		
(d12-Chrysene)	Total	65	1			% Recovery	100	65	52 - 144%	PASS		
(d12-Perylene)	Total	82	1			% Recovery	100	82	36 - 161%	PASS		
(d8-Naphthalene)	Total	54	1			% Recovery	100	54	25 - 125%	PASS		
1-Methylnaphthalene	Total	ND	1	0.001	0.005						µg/L	
1-Methylphenanthrene	Total	ND	1	0.001	0.005						µg/L	
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005						µg/L	
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005						µg/L	
2-Methylnaphthalene	Total	ND	1	0.001	0.005						µg/L	
Acenaphthene	Total	ND	1	0.001	0.005						µg/L	
Acenaphthylene	Total	ND	1	0.001	0.005						µg/L	
Anthracene	Total	ND	1	0.001	0.005						µg/L	
Benz[a]anthracene	Total	ND	1	0.001	0.005						µg/L	
Benzo[a]pyrene	Total	ND	1	0.001	0.005						µg/L	
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005						µg/L	
Benzo[e]pyrene	Total	ND	1	0.001	0.005						µg/L	
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005						µg/L	
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005						µg/L	
Biphenyl	Total	ND	1	0.001	0.005						µg/L	
Chrysene	Total	ND	1	0.001	0.005						µg/L	
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005						µg/L	
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005						µg/L	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

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



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 105222-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-41042			Prepared: 13-Apr-23		Analyzed: 05-May-23					
(d10-Acenaphthene)	Total	54	1				% Recovery	100	0	54	27 - 133%	PASS
(d10-Phenanthrene)	Total	71	1				% Recovery	100	0	71	43 - 129%	PASS
(d12-Chrysene)	Total	63	1				% Recovery	100	0	63	52 - 144%	PASS
(d12-Perylene)	Total	81	1				% Recovery	100	0	81	36 - 161%	PASS
(d8-Naphthalene)	Total	53	1				% Recovery	100	0	53	25 - 125%	PASS
1-Methylnaphthalene	Total	0.29	1	0.001	0.005	µg/L	0.5	0	58	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.374	1	0.001	0.005	µg/L	0.5	0	75	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.344	1	0.001	0.005	µg/L	0.5	0	69	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.301	1	0.001	0.005	µg/L	0.5	0	60	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.728	1	0.001	0.005	µg/L	1.5	0	49	47 - 130%	PASS	
Acenaphthene	Total	1.03	1	0.001	0.005	µg/L	1.5	0	69	53 - 131%	PASS	
Acenaphthylene	Total	0.941	1	0.001	0.005	µg/L	1.5	0	63	43 - 140%	PASS	
Anthracene	Total	1.23	1	0.001	0.005	µg/L	1.5	0	82	58 - 135%	PASS	
Benz[a]anthracene	Total	0.994	1	0.001	0.005	µg/L	1.5	0	66	55 - 145%	PASS	
Benzo[a]pyrene	Total	1.27	1	0.001	0.005	µg/L	1.5	0	85	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	1.25	1	0.001	0.005	µg/L	1.5	0	83	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.355	1	0.001	0.005	µg/L	0.5	0	71	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	1.35	1	0.001	0.005	µg/L	1.5	0	90	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	1.38	1	0.001	0.005	µg/L	1.5	0	92	56 - 145%	PASS	
Biphenyl	Total	0.285	1	0.001	0.005	µg/L	0.5	0	57	56 - 119%	PASS	
Chrysene	Total	1.02	1	0.001	0.005	µg/L	1.5	0	68	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.248	1	0.001	0.005	µg/L	0.5	0	50	50 - 150%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	0.38	1	0.001	0.005	µg/L	0.5	0	76	46 - 126%	PASS		
Fluoranthene	Total	1.48	1	0.001	0.005	µg/L	1.5	0	99	60 - 146%	PASS		
Fluorene	Total	1.04	1	0.001	0.005	µg/L	1.5	0	69	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	1.41	1	0.001	0.005	µg/L	1.5	0	94	50 - 151%	PASS		
Naphthalene	Total	0.706	1	0.001	0.005	µg/L	1.5	0	47	41 - 126%	PASS		
Perylene	Total	0.4	1	0.001	0.005	µg/L	0.5	0	80	48 - 141%	PASS		
Phenanthrene	Total	1.21	1	0.001	0.005	µg/L	1.5	0	81	67 - 127%	PASS		
Pyrene	Total	1.52	1	0.001	0.005	µg/L	1.5	0	101	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: 105222-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:			
		Method: EPA 625.1			Batch ID: O-41042			Prepared: 13-Apr-23			Analyzed: 05-May-23			
(d10-Acenaphthene)	Total	73	1			% Recovery	100	0	73	27 - 133%	PASS	30	30	PASS
(d10-Phenanthrene)	Total	76	1			% Recovery	100	0	76	43 - 129%	PASS	7	30	PASS
(d12-Chrysene)	Total	68	1			% Recovery	100	0	68	52 - 144%	PASS	8	30	PASS
(d12-Perylene)	Total	77	1			% Recovery	100	0	77	36 - 161%	PASS	5	30	PASS
(d8-Naphthalene)	Total	62	1			% Recovery	100	0	62	25 - 125%	PASS	16	30	PASS
1-Methylnaphthalene	Total	0.376	1	0.001	0.005	µg/L	0.5	0	75	31 - 128%	PASS	26	30	PASS
1-Methylphenanthrene	Total	0.387	1	0.001	0.005	µg/L	0.5	0	77	66 - 127%	PASS	3	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.374	1	0.001	0.005	µg/L	0.5	0	75	55 - 122%	PASS	8	30	PASS
2,6-Dimethylnaphthalene	Total	0.337	1	0.001	0.005	µg/L	0.5	0	67	48 - 120%	PASS	11	30	PASS
2-Methylnaphthalene	Total	0.93	1	0.001	0.005	µg/L	1.5	0	62	47 - 130%	PASS	23	30	PASS
Acenaphthene	Total	1.21	1	0.001	0.005	µg/L	1.5	0	81	53 - 131%	PASS	16	30	PASS
Acenaphthylene	Total	1.22	1	0.001	0.005	µg/L	1.5	0	81	43 - 140%	PASS	25	30	PASS
Anthracene	Total	1.24	1	0.001	0.005	µg/L	1.5	0	83	58 - 135%	PASS	1	30	PASS
Benz[a]anthracene	Total	1.05	1	0.001	0.005	µg/L	1.5	0	70	55 - 145%	PASS	6	30	PASS
Benzo[a]pyrene	Total	1.28	1	0.001	0.005	µg/L	1.5	0	85	51 - 143%	PASS	0	30	PASS
Benzo[b]fluoranthene	Total	1.32	1	0.001	0.005	µg/L	1.5	0	88	46 - 165%	PASS	6	30	PASS
Benzo[e]pyrene	Total	0.364	1	0.001	0.005	µg/L	0.5	0	73	42 - 152%	PASS	3	30	PASS
Benzo[g,h,i]perylene	Total	1.37	1	0.001	0.005	µg/L	1.5	0	91	63 - 133%	PASS	1	30	PASS
Benzo[k]fluoranthene	Total	1.33	1	0.001	0.005	µg/L	1.5	0	89	56 - 145%	PASS	3	30	PASS
Biphenyl	Total	0.271	1	0.001	0.005	µg/L	0.5	0	54	56 - 119%	PASS	5	30	PASS
Chrysene	Total	1.11	1	0.001	0.005	µg/L	1.5	0	74	56 - 141%	PASS	8	30	PASS
Dibenz[a,h]anthracene	Total	1.79	1	0.001	0.005	µg/L	1.5	0	119	55 - 150%	PASS	12	30	PASS
Dibenzo[a,l]pyrene	Total	0.293	1	0.001	0.005	µg/L	0.5	0	59	50 - 150%	PASS	17	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Dibenzothiophene	Total	0.388	1	0.001	0.005	µg/L	0.5	0	78	46 - 126%	PASS	3	30	PASS
Fluoranthene	Total	1.43	1	0.001	0.005	µg/L	1.5	0	95	60 - 146%	PASS	4	30	PASS
Fluorene	Total	1.25	1	0.001	0.005	µg/L	1.5	0	83	58 - 131%	PASS	18	30	PASS
Indeno[1,2,3-cd]pyrene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	50 - 151%	PASS	8	30	PASS
Naphthalene	Total	0.91	1	0.001	0.005	µg/L	1.5	0	61	41 - 126%	PASS	26	30	PASS
Perylene	Total	0.346	1	0.001	0.005	µg/L	0.5	0	69	48 - 141%	PASS	15	30	PASS
Phenanthrene	Total	1.19	1	0.001	0.005	µg/L	1.5	0	79	67 - 127%	PASS	2	30	PASS
Pyrene	Total	1.39	1	0.001	0.005	µg/L	1.5	0	93	54 - 156%	PASS	8	30	PASS

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PHYSIS
TENTATIVELY
IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 105223

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.4650	4.2519	1111	Anthracene-D10	1517-22-2	92
10.6448	3.3680	880	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	89
27.5877	3.3106	865	Diethyl Phthalate	84-66-2	97
10.6446	3.0207	789	Cyclopropane, 2-bromo-1,1,3-trimethyl-	36617-00-2	91
32.2420	0.6380	167	Benzoic acid, 2-ethylhexyl ester	5444-75-7	83

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_41042

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.4715	3.0041	1111	Anthracene-D10-	1719-06-8	93
10.6456	2.1463	794	Cyclohexane, nitro-	1122-60-7	90
32.2400	0.8606	318	Benzoic acid, 2-ethylhexyl ester	5444-75-7	86
10.0226	0.3490	129	Propane, 2,2-dimethoxy-	77-76-9	82
10.0224	0.3121	115	Borane, dimethoxy-	4542-61-4	88

Concentration estimated using the response for Anthracene-d10

- 1
- 2
- 3
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- 5
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- 16
- 17

PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Eurofins Eaton Analytical Pomona

841 Corporate Center Drive
 Pomona, CA 91768-2642
 Phone: 626-396-1100

Chain of Custody Record



Client Information (Sub Contract Lab)

Client Contact: **Physis Environmental Laboratories**
 Shipping/Receiving
 Address: **1904 Wright Circle,**
Anaheim
 State, Zip: **CA, 92806**
 Phone: _____
 Email: _____
 Project Name: **RED-HILL**
 Site: _____
 Honolulu BWS Sites

Sampler: _____
 Phone: _____

Lab Pk: **Arada, Rachelle**
 E-Mail: **Rachelle.Arada@et.eurofins.com**
 Accreditation Required (See note):
 State - Hawaii

Carrier/Tracking No(s): _____
 State of Origin: **Hawaii**

COC No: **380-49050-1**
 Page: **Page 1 of 1**
 Job #: **380-44261-1**

Due Date Requested: **5/3/2023**
 FAT Requested (days): _____

Analysis Requested

City: _____
 State, Zip: _____
 PO #: _____
 WO #: _____
 Project #: **38001111**
 SSON#: _____

Field Filtered Sample (Yes or No)
 Perform MS/MSD (Yes or No)
 SUB (625 Acid/Base/PAH + TICs) 625 Acid/Base/PAH + TICs

- Preservation Codes:
- A - HCL
 - B - NaOH
 - C - Zn Acetate
 - D - Nitric Acid
 - E - NaHSO4
 - F - MeOH
 - G - Anchor
 - H - Ascorbic Acid
 - I - Ice
 - J - DI Water
 - K - EDTA
 - L - EDA
 - M - Hexane
 - N - None
 - O - AsH2O2
 - P - H2O2AS
 - Q - Na2S2O3
 - R - Na2S2O5
 - S - H2SO4
 - T - TSP Dodecahydrate
 - U - Acetone
 - V - MCAA
 - W - pH 4.5
 - Y - Thima
 - Z - other (specify)

Sample Identification - Client ID (Lab ID)

AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-44261-1)
 Sample Date: **4/18/23**
 Sample Time: **10:00**
 Sample Type (Cal Comp, G=grab): _____
 Matrix (Benzol, Seawater, Overstabil, BT-Trans, Avul): **Water**
 Preservation Code: _____
 Field Filtered Sample (Yes or No): **X**
 Perform MS/MSD (Yes or No): **X**
 SUB (625 Acid/Base/PAH + TICs) 625 Acid/Base/PAH + TICs

Special Instructions/Note:

See Attached Instructions

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

Possible Hazard Identification

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

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

Empty Kit Relinquished by: _____
 Date: _____

Received by: _____
 Date/Time: _____

Relinquished by: **Xm**
 Date/Time: **4/30/23 1330**
 Company: **CSA**

Received by: **[Signature]**
 Date/Time: **4/30/23 1235**
 Company: **Physis**

Relinquished by: _____
 Date/Time: _____

Received by: _____
 Date/Time: _____

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

Cooler Temperature(s) °C and Other Remarks: _____

Project Iteration ID: 1407003-397
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-44261-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: [Signature]
2. Date Received: 4/20/23
3. Time Received: 1230
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: _____
 - Total Mileage: _____
 - Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 3.1
 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:

Eurofins Drinking Water Testing Pomona

941 Corporate Center Drive
 Pomona, CA 91768-2642
 Phone: 626-386-1100

Chain of Custody Record

eurofins Environment Testing

Client Information			Sampler: RYAN GREER		Lab PM: Arada, Rachelle		Carrier Tracking No(s):		COC No: 380-21928-1845.1																																				
Client Contact: Dr. Ron Fenstemacher			Phone: 808 798 5840		E-Mail: Rachelle.Arada@et.eurofinsus.com		State of Origin: HI		Page: Page 1 of 4																																				
Company: City & County of Honolulu			PWSID:		Analysis Requested						Job #:																																		
Address: 630 South Beretania Street Chemistry Lab			Due Date Requested:		<table border="1" style="width:100%; border-collapse: collapse; font-size: 8px;"> <tr> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>504.1_PREC_505_LL_PREC</th> <th>2320B_2510B_SM4500_H+</th> <th>200.7_200.8</th> <th>2540C_Calcd - Total Dissolved Solids (TDS)</th> <th>SM4500_S2_D - Sulfide, Total</th> <th>524.2_Pres_PREC_524.2_SIM_PREC</th> <th>525.2_PREC - 525plus Plus TICs</th> <th>300_OF_28D_B_300_OF_28D_PREC_300_OF_48H_PREC_4500_F_C</th> <th>245.1 - Local Method</th> <th>SUBCONTRACT - 8015 Jet Fuel 8 (JP8)</th> <th>SUBCONTRACT - 8015 Jet Fuel 5 (JP5)</th> <th>SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil</th> <th>SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)</th> <th>Total Number of Containers</th> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	504.1_PREC_505_LL_PREC	2320B_2510B_SM4500_H+	200.7_200.8	2540C_Calcd - Total Dissolved Solids (TDS)	SM4500_S2_D - Sulfide, Total	524.2_Pres_PREC_524.2_SIM_PREC	525.2_PREC - 525plus Plus TICs	300_OF_28D_B_300_OF_28D_PREC_300_OF_48H_PREC_4500_F_C	245.1 - Local Method	SUBCONTRACT - 8015 Jet Fuel 8 (JP8)	SUBCONTRACT - 8015 Jet Fuel 5 (JP5)	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Total Number of Containers	X	X																Preservation Codes:	
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	504.1_PREC_505_LL_PREC	2320B_2510B_SM4500_H+	200.7_200.8							2540C_Calcd - Total Dissolved Solids (TDS)	SM4500_S2_D - Sulfide, Total	524.2_Pres_PREC_524.2_SIM_PREC	525.2_PREC - 525plus Plus TICs	300_OF_28D_B_300_OF_28D_PREC_300_OF_48H_PREC_4500_F_C	245.1 - Local Method	SUBCONTRACT - 8015 Jet Fuel 8 (JP8)	SUBCONTRACT - 8015 Jet Fuel 5 (JP5)	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Total Number of Containers																								
X	X																																												
City: Honolulu			TAT Requested (days):								A - HCL		M - Hexane		N - None		O - AsNaO2		P - Na2O4S		Q - Na2SO3		R - Na2S2O3		S - H2SO4		T - TSP Dodecahydrate		U - Acetone		V - MCAA		W - pH 4-5		Y - Trizma		Z - other (specify)								
State, Zip: HI, 96843			Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No								F - MeOH		G - Amchlor		H - Ascorbic Acid		I - Ice		J - DI Water		K - EDTA		L - EDA																						
Phone: 808-748-5091(Tel)			PO #: C20525101 exp 05312023		WO #:		Project #:		SSOW#:																																				
Email: RFENSTEMACHER@hbws.org																																													
Project Name: RED-HILL																																													
Site: Hawaii																																													

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Ab)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested																Special Instructions/Note:										
							R	N	D	N	CB	HA		N	D	RA	RA	RA	R														
AIEA GULCH WELLS PUMP 1				Water																												#1- 7718 9128 5610 / 3.8°-3.6°	
AIEA GULCH WELLS PUMP 2	7/18/23	1000	G	Water			6	1	1	1	1	6	3	2	1	2	2	2	3													#2- 7718 9128 4945 / 5.6°-5.4°	
AIEA WELLS P___ (260)				Water																												#3- 7718 9128 5140 / 4.1°-3.9°	
HALAWA WELLS UNITS 1 & 2				Water																												#4- 7718 9128 5231 / 5.8°-5.6°	
MOANALUA WELLS				Water																												#5- 7718 9128 6000 / 5.1°-4.9°	
HALAWA SHAFT VIEW POOL				Water																												#6- 7718 9128 6076 / 5.0°-4.8°	
KAAMILO WELLS				Water																												#7- 7718 9128 5871 / 2.4°-2.2°	
TB: AIEA GULCH WELLS PUMP 1				Water																												#8- 7718 9128 6477 / 4.1°-3.9°	
TB: AIEA GULCH WELLS PUMP 2				Water																													
TB: AIEA WELLS PUMPS1&2(260)				Water																													
TB: HALAWA WELLS UNITS 1 & 2				Water																													

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

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

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

Special Instructions/QC Requirements: _____

Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: **FED EX 8 COOLERS**

Relinquished by: _____	Date/Time: 7/18/23 1300	Company: HBWS	Received by: [Signature]	Date/Time: 07/19/2023 10:15	Company: ECA
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____

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

Cooler Temperature(s) °C and Other Remarks: **(751A) GEL - FROZEN**

Eurofins Drinking Water Testing Pomona

941 Corporate Center Drive
 Pomona, CA 91768-2642
 Phone: 626-386-1100

Chain of Custody Record



Environment Testing

Client Information				Sampler: <i>RYAN GREER</i>	Lab PM: Arada, Rachele	Carrier Tracking No(s):	COC No: 380-21928-1845.2	
Client Contact: Dr. Ron Fenstermacher				Phone: <i>808 7465840</i>	E-Mail: Rachele.Arada@et.eurofinsus.com	State of Origin: <i>HI</i>	Page: Page 2 of 4	
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 - 8015 Ethanol SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs SUBCONTRACT - 625 Base Neutral LL (EAL) Physis SUBCONTRACT - 625 Acid LL (EAL) Physis 524.3_SIM_PREC - Low Level TOPIED/DBCP SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 504.1_PREC - Local Method	Total Number of Containers	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				Project #: 38001111		E - NaHSO4	Q - Na2SO3	
Site: Hawaii				SSOW#:		F - MeOH	R - Na2S2O3	
Sample Identification				Sample Date	Sample Time	Sample Type (C=Comp, G=grab) <small>BT=Tissue, A=Air</small>	Matrix (W=water, S=solid, O=waste/oil) <small>BT=Tissue, A=Air</small>	Other:
								Special Instructions/Note:
AIEA GULCH WELLS PUMP 1							Water	#1- 7718 9128 5610 / 38°-36°
AIEA GULCH WELLS PUMP 2				<i>4/18/23</i>	<i>1000</i>	<i>G</i>	Water	#2- 7718 9128 4945 / 5.6°-5.4°
AIEA WELLS P___ (260)							Water	#3- 7718 9128 5140 / 4.1°-3.9°
HALAWA WELLS UNITS 1 & 2							Water	#4- 7718 9128 5231 / 5.8°-5.6°
MOANALUA WELLS							Water	#5- 7718 9128 6000 / 5.1°-4.9°
HALAWA SHAFT VIEW POOL							Water	#6- 7718 9128 6076 / 5.0°-4.8°
KAAMILO WELLS							Water	#7- 7718 9128 5871 / 2.4°-2.2°
TB: AIEA GULCH WELLS PUMP 1							Water	#8- 7718 9128 6477 / 4.1°-3.9°
TB: AIEA GULCH WELLS PUMP 2							Water	
TB: AIEA WELLS PUMPS1&2(260)							Water	
TB: 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 8 COOLERS</i>			
Relinquished by: <i>RYAN GREER</i>			Date/Time: <i>4/18/23 1300</i>	Company: <i>HBWS</i>	Received by: <i>J. GREITNER</i>	Date/Time: <i>04/19/2023 10:15</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>(75IA) GEL-FROZEN</i>				

Bottle Order Information

Bottle Order: RED-HILL - Quarterly
 Bottle Order #: 1845
 Request From Client: 12/14/2022
 Date Order Posted: 6/23/2022 7:29:27AM
 Order Status: Ready To Process
 Prepared By: Davis Haley
 Deliver By Date: 3/1/2023 11:59:00PM
 Lab Project Number: 38001111
 PWSID: HI00000331

Order Completion Information

Creator: Michelle Do
 Filled by:
 Sent Date:
 Sent Via:
 Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
7	6	42	Voa Vial 40ml Amber - Sodium thiosulfate	Sodium Thiosulfate	504.1_PREC - Local Method	Water	Normal		
					505_LL_PREC - (MOD) ML505 +505-EAL Aldrin Dieldrin Tox	Water	Normal		
7	1	7	Plastic 250ml - unpreserved	None	2320B - (MOD) Total Alkalinity	Water	Normal		
					SM4500_H+ - Local Method	Water	Normal		
					2510B - Conductivity	Water	Normal		
7	1	7	Plastic 500ml - with Nitric Acid	Nitric Acid	200.8 - Metals, Priority Pollutant by 200.8	Water	Normal		
					200.7 - (MOD) Custom	Water	Normal		
7	1	7	Plastic 500ml - unpreserved	None	2540C_Calcd - Total Dissolved Solids (TDS)	Water	Normal		
7	1	7	Plastic 250ml - with Zinc Acetate & NaOH	Zinc Acetate and Sodium Hydroxide	SM4500_S2_D - Sulfide, Total	Water	Normal		
7	6	42	Voa Vial 40ml Amber - Ascor. Acid & HCL	Ascorbic Acid and Hydrochloric Acid	524.2_Pres_PREC - VOASDWA plus TICs + Acetone	Water	Normal		
					524.2_SIM_PREC - TBA by 524.2 SIM	Water	Normal		
7	3	21	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - 525plus Plus TICs	Water	Normal		
7	2	14	Plastic 125mL - unpreserved	None	300_OF_28D_B - Bromide	Water	Normal		
					4500_F_C - Fluoride	Water	Normal		
					300_OF_28D_PREC - Chloride and Sulfate	Water	Normal		
					300_OF_48H_PREC - Nitrite, Nitrate, and Nitrite+Nitrate	Water	Normal		
7	1	7	Plastic 250ml - with Nitric Acid	Nitric Acid	245.1 - Local Method	Water	Normal		

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

7	2	14	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/H ydrochloric Acid	SUBCONTRACT - 8015 Jet Fuel 8 (JP8)	Water	Normal		
7	2	14	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/H ydrochloric Acid	SUBCONTRACT - 8015 Jet Fuel 5 (JP5)	Water	Normal		
7	2	14	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/H ydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
7	3	21	Voa Vial 40ml - SodiumThio w/HCL-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
7	3	21	Voa Vial 40ml Amber - Sodium thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 8015 Ethanol	Water	Normal		
7	2	14	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal		
7	2	14	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 Base Neutral LL (EAL) Physis	Water	Normal		
7	2	14	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 Acid LL (EAL) Physis	Water	Normal		
7	3	21	Voa Vial 40ml Amber - Ascorbic & Maleic	Ascorbic Acid/Maleic	524.3_SIM_PREC - Low Level TCP/EDB/DBCP	Water	Normal		
7	2	14	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/H ydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		
7	6	42	Voa Vial 40ml Amber - Ascor. Acid & HCL	Ascorbic Acid and Hydrochloric Acid	524.2_Pres_PREC - VOASDWA plus TICs + Acetone	Water	Trip Blank		
					524.2_SIM_PREC - TBA by 524.2 SIM	Water	Trip Blank		
7	3	21	Voa Vial 40ml Amber - Sodium thiosulfate	Sodium Thiosulfate	504.1_PREC - Local Method	Water	Trip Blank		
7	2	14	Voa Vial 40ml Amber - Ascorbic & Maleic	Ascorbic Acid/Maleic	524.3_SIM_PREC - Low Level TCP/EDB/DBCP	Water	Trip Blank		

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

Eurofins Eaton Analytical Pomona

941 Corporate Center Drive
 Pomona, CA 91768-2642
 Phone: 626-386-1100

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:																														
Client Contact: Shipping/Receiving		Phone:	Arada, Rachelle		380-49201.1																														
Company: Eurofins Eaton Analytical		Address: 110 S Hill Street,	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1																														
City: South Bend		Due Date Requested: 5/9/2023	Accreditations Required (See note): State - Hawaii		Job #: 380-44261-1																														
State, Zip: IN, 46617		TAT Requested (days):	Analysis Requested <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>245.1/245.1_Prep Mercury by 245.1</th> <th>505_PREC/505_Prep Phase II & V PCB/Tosaphene/Chlordane</th> <th>525.2_LL_PREC/525.2_Prep (MOD) CA Pest</th> <th>Total Number of Containers</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	245.1/245.1_Prep Mercury by 245.1	505_PREC/505_Prep Phase II & V PCB/Tosaphene/Chlordane	525.2_LL_PREC/525.2_Prep (MOD) CA Pest	Total Number of Containers																									Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 R - Na2SO3 F - MeOH S - H2SO4 G - Amchlor T - TSP Dodecahydrate H - Ascorbic Acid U - Acetone I - Ice V - MCAA J - DI Water W - pH 4-5 K - EDTA Y - Trizma L - EDA Z - other (specify)
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	245.1/245.1_Prep Mercury by 245.1			505_PREC/505_Prep Phase II & V PCB/Tosaphene/Chlordane	525.2_LL_PREC/525.2_Prep (MOD) CA Pest	Total Number of Containers																												
Phone: 574-233-4777(Tel) 574-233-8207(Fax)		PO #:			Other:																														
Email:		WO #:																																	
Project Name: RED-HILL		Project #: 38001111																																	
Site: Honolulu BWS Sites		SSOW#:																																	
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Onwater/oli, ST=Trace, AA=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	245.1/245.1_Prep Mercury by 245.1	505_PREC/505_Prep Phase II & V PCB/Tosaphene/Chlordane	525.2_LL_PREC/525.2_Prep (MOD) CA Pest	Total Number of Containers	Special Instructions/Note:																								
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-44261-1)	4/18/23	10:00 Hawaiian		Water			X	X	X	2																									
Client Provided Sample Container																																			
only received 525 bottles ss 4/22/23 Notified Rachelle Arada via NDM email ss 4/22/23										Initial Temp: <u>1.6</u> Corrected Temp: <u>1.6</u> IR Gun # <u>21</u> wet																									
Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.																																			
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																													
Unconfirmed						<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)				Primary Deliverable Rank: 2		Special Instructions/QC Requirements:																													
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:																											
Relinquished by: <i>G. RETNER</i>		Date/Time: <i>04/21/2023 10:25</i>		Company: <i>EEA</i>		Received by: <i>SS Arada</i>		Date/Time: <i>4/22/23 0845</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: △ Yes △ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:																													

Eurofins Eaton Analytical Pomona

941 Corporate Center Drive
 Pomona, CA 91768-2642
 Phone: 626-386-1100

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)			Sampler:		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-49201.1		
Client Contact: Shipping/Receiving			Phone:		E-Mail: Rachele.Arada@et.eurofinsus.com		State of Origin: Hawaii		Page: Page 1 of 1		
Company: Eurofins Eaton Analytical					Accreditations Required (See note): State - Hawaii					Job #: 380-44261-1	
Address: 110 S Hill Street,			Due Date Requested: 5/9/2023		Analysis Requested					Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 R - Na2SO3 F - MeOH S - H2SO4 G - Amchlor T - TSP Dodecahydrate H - Ascorbic Acid U - Acetone I - Ice V - MCAA J - DI Water W - pH 4-5 K - EDTA Y - Trizma L - EDA Z - other (specify)	
City: South Bend			TAT Requested (days):								
State, Zip: IN, 46617			PO #:								
Phone: 574-233-4777(Tel) 574-233-8207(Fax)			WO #:								
Email:			Project #: 38001111		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers		
Project Name: RED-HILL			SSOW#:		245.1/245.1_Prep Mercury by 245.1		505_PREC/505_Prep Phase II & V				
Site: Honolulu BWS Sites			Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=water/soil, BT=Tissue, A=Abr)		
Sample Identification - Client ID (Lab ID)									Special Instructions/Note:		
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-44261-1)			4/18/23		10:00 Hawaiian		Water		2		
<p><i>only received 525 bottles ss 4/22/23</i> <i>Notified Rachele Arada via NCM email ss 4/22/23</i></p>									<p style="color: red; text-align: center;">Client Provided Sample Container</p> <p style="color: red; text-align: center;">Initial Temp: <u>1.6</u> Corrected Temp: <u>1.6</u> IR Gun # <u>21</u> <i>Wet</i></p>		
<p>Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.</p>											
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Unconfirmed						<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)				Primary Deliverable Rank: 2		Special Instructions/QC Requirements:					
Empty Kit Relinquished by:			Date:			Time:			Method of Shipment:		
Relinquished by: <i>G. BETNER</i>			Date/Time: <i>04/21/2023 10:25</i>			Company: <i>EEA</i>			Received by: <i>sgj</i>		
Relinquished by:			Date/Time:			Company:			Date/Time: <i>4/22/23 0845</i>		
Relinquished by:			Date/Time:			Company:			Date/Time:		
Custody Seals Intact: Δ Yes Δ No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:					

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Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:	Lab Pk:	Carrier Tracking Note(s):	IOC No:
Client Contact:		Arada, Rachelle	380-49044.1		380-49044.1
Shipping/Receiving:		E-Mail:	Page:	State of Origin:	Page 1 of 1
Company:		Rachelle.Arada@et.eurofins.com	Job #:	380-44261-1	380-44261-1
Eurofins Eaton Analytical		Accreditations Required (See note): State - Hawaii			
Address:		Due Date Requested:			
110 S Hill Street,		5/9/2023			
City:		TAT Requested (days):			
South Bend					
State, Zip:		PO #:			
IN, 46617		WO #:			
Phone:		Project #:			
574-233-4777(Tel) 574-233-8207(Fax)		38001111			
Email:		SSOW#:			
Project Name:		Site:			
RED-HILL		Honolulu BWS Sites			
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Rainfall, Overhead, In-stream, Other)
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-44261-1)		4/18/23	10:00 Hawaiian	C=Comp	Water
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-44261-1)		4/18/23	10:00 Hawaiian	C=Comp	Water
Special Instructions/Note:		Total Number of Containers: <input checked="" type="checkbox"/> 4			
5.0		* Did not receive			
30		ML-424/23			
wet		ML-424/23			
<p>Analysis Requested</p> <p>Client Provided Sample Containers</p> <p>245.1/245.1 Prep Mercury by 245.1</p> <p>505_REC/505_Prep Phase II & V</p> <p>PCBT/rophenol/Chlordane</p> <p>Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/></p> <p>Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/></p> <p>Preservation Code:</p>					
<p>Preservation Codes:</p> <p>A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:</p> <p>M - Hexane N - None O - AsHClO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)</p>					
<p>Possible Hazard Identification</p> <p>Unconfirmed</p> <p>Deliverable Requested: I, II, III, IV, Other (specify)</p> <p>Primary Deliverable Rank: 2</p> <p>Special Instructions/QC Requirements:</p> <p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <p><input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months</p>					
<p>Empty Kit Relinquished by:</p> <p>Date/Time: 4/20/23 8:08</p> <p>Company: Cert Corp</p>					
<p>Relinquished by:</p> <p>Date/Time: 4/20/23 9:00</p> <p>Company: Morgan Appliance</p>					
<p>Relinquished by:</p> <p>Date/Time: _____</p> <p>Company: _____</p>					
<p>Custody Seals Intact: Custody Seal No.: _____</p> <p>Method of Shipment: _____</p> <p>Cooler Temperature(s) °C and Other Remarks: <i>Field Delay</i></p>					



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-44261-1

Login Number: 44261
List Number: 1
Creator: Ngo, Theodore

List Source: Eurofins Eaton Analytical Pomona

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



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-44261-1

Login Number: 44261
List Number: 2
Creator: Spurgeon, Sheri

List Source: Eurofins Eaton Analytical South Bend
List Creation: 04/22/23 10:46 AM

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

