

# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 9/4/2024 8:40:24 AM

## JOB DESCRIPTION

RED-HILL  
524.2

## JOB NUMBER

380-109899-1

# Eurofins Eaton Analytical Pomona

## Job Notes

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

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

## Compliance Statement

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

## Authorization



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Authorized for release by  
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(626)386-1106



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# Definitions/Glossary

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

Job ID: 380-109899-1  
SDG: 524.2

## Glossary

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

# Case Narrative

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

Job ID: 380-109899-1

**Job ID: 380-109899-1**

**Eurofins Eaton Analytical Pomona**

## Job Narrative 380-109899-1

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

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

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

### Receipt

The samples were received on 8/22/2024 9:53 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C.

### GC/MS VOA

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

# Detection Summary

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

Job ID: 380-109899-1  
SDG: 524.2

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

**Lab Sample ID: 380-109899-1**

No Detections.

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

**Lab Sample ID: 380-109899-2**

No Detections.

**Client Sample ID: TRAVEL BLANK**

**Lab Sample ID: 380-109899-3**

No Detections.

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This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 380-109899-1  
SDG: 524.2

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

Lab Sample ID: 380-109899-1

Date Collected: 08/20/24 10:19

Matrix: Drinking Water

Date Received: 08/22/24 09:53

PWSID Number: HI0000331

### 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)	<2.0		2.0	ug/L			09/03/24 15:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		70 - 130				09/03/24 15:52	1
4-Bromofluorobenzene (Surr)	93		70 - 130				09/03/24 15:52	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130				09/03/24 15:52	1

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

Lab Sample ID: 380-109899-2

Date Collected: 08/20/24 11:11

Matrix: Drinking Water

Date Received: 08/22/24 09:53

PWSID Number: HI0000331

### 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)	<2.0		2.0	ug/L			09/03/24 16:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130				09/03/24 16:15	1
4-Bromofluorobenzene (Surr)	93		70 - 130				09/03/24 16:15	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130				09/03/24 16:15	1

## Client Sample ID: TRAVEL BLANK

Lab Sample ID: 380-109899-3

Date Collected: 08/20/24 10:19

Matrix: Water

Date Received: 08/22/24 09:53

### 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)	<2.0		2.0	ug/L			09/03/24 16:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		70 - 130				09/03/24 16:37	1
4-Bromofluorobenzene (Surr)	94		70 - 130				09/03/24 16:37	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130				09/03/24 16:37	1

# Surrogate Summary

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

Job ID: 380-109899-1  
SDG: 524.2

## 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)
380-109899-1	MOANALUA WELLS (331-223-T	97	93	101
380-109899-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	98	93	102

**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)
380-109899-3	TRAVEL BLANK	96	94	103
LCS 380-106526/2	Lab Control Sample	97	91	101
LCSD 380-106526/3	Lab Control Sample Dup	96	94	100
MB 380-106526/5	Method Blank	97	93	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 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 380-106526/4	Lab Control Sample	96	95	103

**Surrogate Legend**

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



# QC Sample Results

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

Job ID: 380-109899-1  
SDG: 524.2

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

**Lab Sample ID: MB 380-106526/5**  
**Matrix: Water**  
**Analysis Batch: 106526**

**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)	<2.0		2.0	ug/L			09/03/24 15:29	1
Surrogate	%Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		70 - 130				09/03/24 15:29	1
4-Bromofluorobenzene (Surr)	93		70 - 130				09/03/24 15:29	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 130				09/03/24 15:29	1

**Lab Sample ID: LCS 380-106526/2**  
**Matrix: Water**  
**Analysis Batch: 106526**

**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	5.91		ug/L		118	70 - 130
Surrogate	%Recovery	LCS Qualifier	LCS Limits				
Toluene-d8 (Surr)	97		70 - 130				
4-Bromofluorobenzene (Surr)	91		70 - 130				
1,2-Dichloroethane-d4 (Surr)	101		70 - 130				

**Lab Sample ID: LCSD 380-106526/3**  
**Matrix: Water**  
**Analysis Batch: 106526**

**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	5.71		ug/L		114	70 - 130	3	20
Surrogate	%Recovery	LCSD Qualifier	LCSD Limits						
Toluene-d8 (Surr)	96		70 - 130						
4-Bromofluorobenzene (Surr)	94		70 - 130						
1,2-Dichloroethane-d4 (Surr)	100		70 - 130						

**Lab Sample ID: MRL 380-106526/4**  
**Matrix: Water**  
**Analysis Batch: 106526**

**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	2.43		ug/L		122	50 - 150
Surrogate	%Recovery	MRL Qualifier	MRL Limits				
Toluene-d8 (Surr)	96		50 - 150				
4-Bromofluorobenzene (Surr)	95		50 - 150				
1,2-Dichloroethane-d4 (Surr)	103		50 - 150				

# QC Association Summary

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

Job ID: 380-109899-1  
SDG: 524.2

## GC/MS VOA

### Analysis Batch: 106526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-109899-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	524.2	
380-109899-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	524.2	
380-109899-3	TRAVEL BLANK	Total/NA	Water	524.2	
MB 380-106526/5	Method Blank	Total/NA	Water	524.2	
LCS 380-106526/2	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-106526/3	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-106526/4	Lab Control Sample	Total/NA	Water	524.2	

# Lab Chronicle

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

Job ID: 380-109899-1  
SDG: 524.2

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

Lab Sample ID: 380-109899-1

Date Collected: 08/20/24 10:19

Matrix: Drinking Water

Date Received: 08/22/24 09:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	106526	P3EE	EA POM	09/03/24 15:52

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

Lab Sample ID: 380-109899-2

Date Collected: 08/20/24 11:11

Matrix: Drinking Water

Date Received: 08/22/24 09:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	106526	P3EE	EA POM	09/03/24 16:15

## Client Sample ID: TRAVEL BLANK

Lab Sample ID: 380-109899-3

Date Collected: 08/20/24 10:19

Matrix: Water

Date Received: 08/22/24 09:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	106526	P3EE	EA POM	09/03/24 16:37

### Laboratory References:

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

# Accreditation/Certification Summary

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

Job ID: 380-109899-1  
SDG: 524.2

## Laboratory: Eurofins Eaton Analytical Pomona

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-25

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# Method Summary

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

Job ID: 380-109899-1  
SDG: 524.2

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS SIM)	EPA-DW	EA POM

**Protocol References:**

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

**Laboratory References:**

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



# Sample Summary

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

Job ID: 380-109899-1  
SDG: 524.2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-109899-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	08/20/24 10:19	08/22/24 09:53	HI0000331
380-109899-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	08/20/24 11:11	08/22/24 09:53	HI0000331
380-109899-3	TRAVEL BLANK	Water	08/20/24 10:19	08/22/24 09:53	

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

### Chain of Custody Record



<b>Client Information</b> Client Contact: Dr Ron Fenstermacher Company: City & County of Honolulu Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State Zip: HI 96843 Phone: 808-748-5091 (tel) Email: rfenstermacher@hbws.org Project Name: RED HILL Site:		Lab PM: Arada Rachelle E-Mail: Rachelle.Arada@et.euromisus.com Carrier Tracking No(s): State of Origin:		COC No: Page: Page 2 of 2 Job #:	
Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: C20525101 exp 05312023 WO #: Project #: 38001111 SSO#:#		<b>Analysis Requested</b>  380-109899 COC			
Sample Date: 20 Aug 2024 Sample Time: 1019 Sample Type (C=Comp, G=grab): G Preservation Code: Water		Field Filled Sample (Yes or No): <input checked="" type="checkbox"/> HA Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/> 3 524 2 SIM, PREC TBA by 524 2 SIM		Total Number of Containers: <input checked="" type="checkbox"/>	
Sample Identification: Moanalua Wells Atea Gulch Wells P2 Travel Blank		Matrix (Specify: Urine, Saliva, Spinal Fluid, Other): Preservation Code: Water		Special Instructions/Note:	
Possible Hazard Identification <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 Deliverable Requested I II III IV Other (specify):					
Empty Kit Relinquished by: [Redacted] Relinquished by: [Redacted] Relinquished by:					
Date/Time: 21 AUG 2024 1400 Date/Time:		Date/Time: 08/12/2024 09:53 Date/Time:		Method of Shipment: FED EX 7781 1104 6362 Company:	
Date/Time:		Date/Time:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks: (751A) 0.7°-0.1° = 0.6° CEL-FROZEN		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	



# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-109899-1

SDG Number: 524.2

**Login Number: 109899**

**List Number: 1**

**Creator: Gerfen, Chris**

**List Source: Eurofins Eaton Analytical Pomona**

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