eurofins | Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 2/1/2023 11:09:10 PM

## JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

## JOB NUMBER

380-29203-1

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

See page two for job notes and contact information.

## Job Notes

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

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

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

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

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

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

## Compliance Statement

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

## Authorization

Rachelle Arada

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Authorized for release by
Rachelle Arada, Manager of Project Management
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(626)386-1106

# Table of Contents

# Definitions/Glossary

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

Job ID: 380-29203-1

## Qualifiers

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| ^3+ | Reporting Limit Check Standard is outside acceptance limits, high biased |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### GC/MS Semi VOA TICs

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

### Subcontract

| Qualifier | Qualifier Description |
|---|---|
| U | This analyte was not detected. |

## Glossary

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

## Job ID: 380-29203-1

### Laboratory: Eurofins Eaton Monrovia

**Narrative**

**Job Narrative**
**380-29203-1**

**Comments**
No additional comments.

**Receipt**
The samples were received on 11/23/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, an where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.1º C.

**GC/MS Semi VOA**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**Subcontract non-Sister**
See attached subcontract report.

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

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

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

# Detection Summary

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

Job ID: 380-29203-1

## Client Sample ID: MOANALUA WELLS
**PWSID Number: HI0000331**

**Lab Sample ID: 380-29203-1**

No Detections.

## Client Sample ID: TB MOANALUA WELLS

**Lab Sample ID: 380-29203-2**

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-29203-1

**Client Sample ID: MOANALUA WELLS**
**Date Collected: 11/21/22 10:25**
**Date Received: 11/23/22 10:00**

**Lab Sample ID: 380-29203-1**
**Matrix: Drinking Water**
**PWSID Number: HI0000331**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4'-DDD | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| 2,4'-DDE | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| 2,4'-DDT | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| 2,4-Dinitrotoluene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| 2,6-Dinitrotoluene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| 4,4'-DDD | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| 4,4'-DDE | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| 4,4'-DDT | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Acenaphthene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Acenaphthylene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Acetochlor | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Alachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| alpha-BHC | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| alpha-Chlordane | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Anthracene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Atrazine | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Benz(a)anthracene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Benzo[a]pyrene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Benzo[b]fluoranthene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Benzo[g,h,i]perylene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Benzo[k]fluoranthene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| beta-BHC | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Bromacil | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Butachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Butylbenzylphthalate | ND | ^3+ | 0.50 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Caffeine | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Chlorobenzilate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Chloroneb | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Chlorothalonil (Draconil, Bravo) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Chlorpyrifos | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Chrysene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| delta-BHC | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Di(2-ethylhexyl)adipate | ND | | 0.60 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Bis(2-ethylhexyl) phthalate | ND | | 0.60 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Diazinon (Qualitative) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Diclorvos (DDVP) | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Dieldrin | ND | | 0.20 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Diethylphthalate | ND | | 0.50 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Dimethoate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Dimethylphthalate | ND | | 0.50 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Di-n-butyl phthalate | ND | | 1.0 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Di-n-octyl phthalate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Endosulfan I (Alpha) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Endosulfan II (Beta) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Endosulfan sulfate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Endrin | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Endrin aldehyde | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| EPTC | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |

**Client Sample ID: MOANALUA WELLS**
**Date Collected: 11/21/22 10:25**
**Date Received: 11/23/22 10:00**

**Lab Sample ID: 380-29203-1**
**Matrix: Drinking Water**
**PWSID Number: HI0000331**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Fluorene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| gamma-Chlordane | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Heptachlor | ND | | 0.040 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Heptachlor epoxide (isomer B) | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Hexachlorobenzene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Hexachlorocyclopentadiene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Isophorone | ND | | 0.50 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Lindane | ND | | 0.040 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Malathion | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Methoxychlor | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Metolachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Metribuzin | ND | ^3+ | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Molinate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Naphthalene | ND | | 0.30 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Parathion | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Pendimethalin (Penoxaline) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Total Permethrin (mixed isomers) | ND | | 0.20 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Phenanthrene | ND | | 0.040 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Propachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Pyrene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Simazine | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Terbacil | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Terbuthylazine | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Thiobencarb | ND | | 0.20 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| trans-Nonachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |
| Trifluralin | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 15:06 | 1 |

| *Tentatively Identified Compound* | *Est. Result* | *Qualifier* | *Unit* | *D* | *RT* | *CAS No.* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|---|---|---|
| *Tentatively Identified Compound* | *None* | | *ug/L* | | | | *12/01/22 06:49* | *12/05/22 15:06* | *1* |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Nitro-m-xylene* | *100* | | *70 - 130* | *12/01/22 06:49* | *12/05/22 15:06* | *1* |
| *Triphenylphosphate* | *107* | | *70 - 130* | *12/01/22 06:49* | *12/05/22 15:06* | *1* |
| *Perylene-d12* | *99* | | *70 - 130* | *12/01/22 06:49* | *12/05/22 15:06* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| 1-Methylphenanthrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| 2,3,5-Trimethylnaphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| 2,6-Dimethylnaphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| 2-Methylnaphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Acenaphthene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Acenaphthylene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Anthracene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Benz[a]anthracene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Benzo[a]pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Benzo[b]fluoranthene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |

## Client Sample ID: MOANALUA WELLS

**Lab Sample ID: 380-29203-1**

**Date Collected: 11/21/22 10:25**
**Date Received: 11/23/22 10:00**

**Matrix: Drinking Water**
**PWSID Number: HI0000331**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzo[e]pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Benzo[g,h,i]perylene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Benzo[k]fluoranthene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Biphenyl | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Chrysene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Dibenz[a,h]anthracene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Dibenzo[a,l]pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Dibenzothiophene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Disalicylidenepropanediamine | ND | | 0.1 | 0.05 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Fluoranthene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Fluorene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Naphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Perylene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Phenanthrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |
| Pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/20/22 03:21 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *(d10-Acenaphthene)* | *77* | | *45 - 118* | *11/28/22 00:00* | *12/20/22 03:21* | *1* |
| *(d10-Phenanthrene)* | *82* | | *56 - 123* | *11/28/22 00:00* | *12/20/22 03:21* | *1* |
| *(d12-Chrysene)* | *85* | | *36 - 142* | *11/28/22 00:00* | *12/20/22 03:21* | *1* |
| *(d12-Perylene)* | *80* | | *36 - 161* | *11/28/22 00:00* | *12/20/22 03:21* | *1* |
| *(d8-Naphthalene)* | *72* | | *20 - 112* | *11/28/22 00:00* | *12/20/22 03:21* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| GASOLINE | ND | U | 0.020 | | mg/L | | | 11/28/22 23:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *BROMOFLUOROBENZENE* | *99* | | *60 - 140* | | *11/28/22 23:49* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| DIESEL | ND | U | 0.027 | | mg/L | | | 12/03/22 21:30 | 1 |
| JP5 | ND | U | 0.053 | | mg/L | | | 12/03/22 21:30 | 1 |
| JP8 | ND | U | 0.053 | | mg/L | | | 12/03/22 21:30 | 1 |
| MOTOR OIL | ND | U | 0.053 | | mg/L | | | 12/03/22 21:30 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *BROMOBENZENE* | *67* | | *60 - 130* | | *12/03/22 21:30* | *1* |
| *HEXACOSANE* | *107* | | *60 - 130* | | *12/03/22 21:30* | *1* |

## Client Sample ID: TB MOANALUA WELLS

**Lab Sample ID: 380-29203-2**

**Date Collected: 11/21/22 10:25**
**Date Received: 11/23/22 10:00**

**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| GASOLINE | ND | U | 0.020 | | mg/L | | | 11/29/22 00:25 | 1 |

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

Job ID: 380-29203-1

**Client Sample ID: TB MOANALUA WELLS**
**Date Collected: 11/21/22 10:25**
**Date Received: 11/23/22 10:00**

**Lab Sample ID: 380-29203-2**
**Matrix: Water**

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| BROMOFLUOROBENZENE | 100 | | 60 - 140 | | 11/29/22 00:25 | 1 |

# Action Limit Summary

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

Job ID: 380-29203-1

## Client Sample ID: MOANALUA WELLS

## Lab Sample ID: 380-29203-1

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

# Surrogate Summary

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

Job ID: 380-29203-1

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | 2NMX | TPP | PRY |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) | (70-130) |
| 380-29203-1 | MOANALUA WELLS | 100 | 107 | 99 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | 2NMX | TPP | PRY |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) | (70-130) |
| 380-29023-B-3-A MS | Matrix Spike | 99 | 110 | 102 |
| 380-29023-B-4-A DU | Duplicate | 99 | 103 | 95 |
| LCS 380-25484/3-A | Lab Control Sample | 99 | 108 | 98 |
| LCSD 380-25484/4-A | Lab Control Sample Dup | 100 | 102 | 96 |
| MB 380-25484/1-A | Method Blank | 100 | 107 | 96 |
| MRL 380-25484/2-A | Lab Control Sample | 99 | 107 | 99 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | | | | |
|---|---|---|---|---|---|---|
| | | Acenapht | Phenanth | CRY | NPT | PRY |
| Lab Sample ID | Client Sample ID | (27-133) | (43-129) | (52-144) | (25-125) | (36-161) |
| 101950-B1 | Method Blank | 81 | 86 | 87 | 80 | 77 |
| 101950-BS1 | Lab Control Sample | 83 | 87 | 92 | 64 | 87 |
| 101950-BS2 | Lab Control Sample Dup | 86 | 89 | 89 | 79 | 85 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | | | | |
|---|---|---|---|---|---|---|
| | | Acenapht | Phenanth | CRY | NPT | PRY |
| Lab Sample ID | Client Sample ID | (45-118) | (56-123) | (36-142) | (20-112) | (36-161) |
| 380-29203-1 | MOANALUA WELLS | 77 | 82 | 85 | 72 | 80 |

**Surrogate Legend**

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

# Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-29203-1
Project/Site: RED-HILL

CRY = (d12-Chrysene)
NPT = (d8-Naphthalene)
PRY = (d12-Perylene)

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) |
|---|---|---|
| | | BFB |
| Lab Sample ID | Client Sample ID | (60-140) |
| 380-29203-1 | MOANALUA WELLS | 99 |

**Surrogate Legend**
BFB = BROMOFLUOROBENZENE

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) |
|---|---|---|
| | | BFB |
| Lab Sample ID | Client Sample ID | (70-130) |
| 22VGH7K14C | LCD | 126 |
| 22VGH7K14L | Lab Control Sample | 117 |

**Surrogate Legend**
BFB = BROMOFLUOROBENZENE

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) |
|---|---|---|
| | | BFB |
| Lab Sample ID | Client Sample ID | (60-140) |
| 380-29203-2 | TB MOANALUA WELLS | 100 |

**Surrogate Legend**
BFB = BROMOFLUOROBENZENE

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) |
|---|---|---|
| | | BFB |
| Lab Sample ID | Client Sample ID | |
| 22VGH7K14B | Method Blank | |

**Surrogate Legend**
BFB = BROMOFLUOROBENZENE

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BB | XACOSA |
| Lab Sample ID | Client Sample ID | (60-130) | (60-130) |
| 380-29203-1 | MOANALUA WELLS | 67 | 107 |

**Surrogate Legend**
BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

# Surrogate Summary

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

Job ID: 380-29203-1

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

**Matrix: WATER**

**Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BB | XACOSA |
| Lab Sample ID | Client Sample ID | | |
| 22DSL002WB | Method Blank | | |

**Surrogate Legend**

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

**Matrix: WATER**

**Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BB | XACOSA |
| Lab Sample ID | Client Sample ID | (60-130) | (60-130) |
| 22DSL002WC | LCD | 102 | 111 |
| 22DSL002WL | Lab Control Sample | 103 | 104 |
| 22J5L002WC | LCD | 104 | 104 |
| 22J5L002WL | Lab Control Sample | 95 | 99 |
| 22J8L002WC | LCD | 101 | 106 |
| 22J8L002WL | Lab Control Sample | 89 | 105 |

**Surrogate Legend**

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

**Lab Sample ID: MB 380-25484/1-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4'-DDD | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| 2,4'-DDE | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| 2,4'-DDT | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| 2,4-Dinitrotoluene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| 2,6-Dinitrotoluene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| 4,4'-DDD | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| 4,4'-DDE | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| 4,4'-DDT | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Acenaphthene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Acenaphthylene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Acetochlor | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Alachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| alpha-BHC | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| alpha-Chlordane | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Anthracene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Atrazine | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Benz(a)anthracene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Benzo[a]pyrene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Benzo[b]fluoranthene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Benzo[g,h,i]perylene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Benzo[k]fluoranthene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| beta-BHC | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Bromacil | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Butachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Butylbenzylphthalate | ND | | 0.50 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Caffeine | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Chlorobenzilate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Chloroneb | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Chlorothalonil (Draconil, Bravo) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Chlorpyrifos | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Chrysene | ND | | 0.020 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| delta-BHC | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Di(2-ethylhexyl)adipate | ND | | 0.60 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Bis(2-ethylhexyl) phthalate | ND | | 0.60 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Diazinon (Qualitative) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Diclorvos (DDVP) | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Dieldrin | ND | | 0.20 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Diethylphthalate | ND | | 0.50 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Dimethoate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Dimethylphthalate | ND | | 0.50 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Di-n-butyl phthalate | ND | | 1.0 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Di-n-octyl phthalate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Endosulfan I (Alpha) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Endosulfan II (Beta) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Endosulfan sulfate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Endrin | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Endrin aldehyde | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |

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

**Lab Sample ID: MB 380-25484/1-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| EPTC | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Fluoranthene | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Fluorene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| gamma-Chlordane | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Heptachlor | ND | | 0.040 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Heptachlor epoxide (isomer B) | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Hexachlorobenzene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Hexachlorocyclopentadiene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Isophorone | ND | | 0.50 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Lindane | ND | | 0.040 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Malathion | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Methoxychlor | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Metolachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Metribuzin | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Molinate | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Naphthalene | ND | | 0.30 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Parathion | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Pendimethalin (Penoxaline) | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Total Permethrin (mixed isomers) | ND | | 0.20 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Phenanthrene | ND | | 0.040 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Propachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Pyrene | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Simazine | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Terbacil | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Terbuthylazine | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Thiobencarb | ND | | 0.20 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| trans-Nonachlor | ND | | 0.050 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |
| Trifluralin | ND | | 0.10 | | ug/L | | 12/01/22 06:49 | 12/05/22 10:07 | 1 |

| *Tentatively Identified Compound* | *MB Est. Result* | *MB Qualifier* | *Unit* | *D* | *RT* | *CAS No.* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|---|---|---|
| *Unknown* | *1.67* | *T J* | *ug/L* | | *2.40* | | *12/01/22 06:49* | *12/05/22 10:07* | *1* |
| *Unknown* | *0.592* | *T J* | *ug/L* | | *2.70* | | *12/01/22 06:49* | *12/05/22 10:07* | *1* |
| *Unknown* | *0.842* | *T J* | *ug/L* | | *5.83* | | *12/01/22 06:49* | *12/05/22 10:07* | *1* |
| *Unknown* | *0.910* | *T J* | *ug/L* | | *6.44* | | *12/01/22 06:49* | *12/05/22 10:07* | *1* |
| *Unknown* | *0.836* | *T J* | *ug/L* | | *6.51* | | *12/01/22 06:49* | *12/05/22 10:07* | *1* |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Nitro-m-xylene* | *100* | | *70 - 130* | *12/01/22 06:49* | *12/05/22 10:07* | *1* |
| *Triphenylphosphate* | *107* | | *70 - 130* | *12/01/22 06:49* | *12/05/22 10:07* | *1* |
| *Perylene-d12* | *96* | | *70 - 130* | *12/01/22 06:49* | *12/05/22 10:07* | *1* |

**Lab Sample ID: LCS 380-25484/3-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4'-DDD | | | 1.99 | 2.12 | | ug/L | | 106 | 70 - 130 | | |

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

**Lab Sample ID: LCS 380-25484/3-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 2,4'-DDE | 1.99 | 2.08 | | ug/L | | 105 | 70 - 130 |
| 2,4'-DDT | 1.99 | 1.95 | | ug/L | | 98 | 70 - 130 |
| 2,4-Dinitrotoluene | 1.99 | 2.14 | | ug/L | | 108 | 70 - 130 |
| 2,6-Dinitrotoluene | 1.99 | 2.01 | | ug/L | | 101 | 70 - 130 |
| 4,4'-DDD | 1.99 | 1.99 | | ug/L | | 100 | 70 - 130 |
| 4,4'-DDE | 1.99 | 2.02 | | ug/L | | 102 | 70 - 130 |
| 4,4'-DDT | 1.99 | 1.77 | | ug/L | | 89 | 70 - 130 |
| Acenaphthene | 1.99 | 1.88 | | ug/L | | 95 | 70 - 130 |
| Acenaphthylene | 1.99 | 1.89 | | ug/L | | 95 | 70 - 130 |
| Acetochlor | 1.99 | 2.18 | | ug/L | | 110 | 70 - 130 |
| Alachlor | 1.99 | 2.03 | | ug/L | | 102 | 70 - 130 |
| alpha-BHC | 1.99 | 1.97 | | ug/L | | 99 | 70 - 130 |
| alpha-Chlordane | 1.99 | 1.93 | | ug/L | | 97 | 70 - 130 |
| Anthracene | 1.99 | 2.08 | | ug/L | | 105 | 70 - 130 |
| Atrazine | 1.99 | 2.11 | | ug/L | | 106 | 70 - 130 |
| Benz(a)anthracene | 1.99 | 1.95 | | ug/L | | 98 | 70 - 130 |
| Benzo[a]pyrene | 1.99 | 2.07 | | ug/L | | 104 | 70 - 130 |
| Benzo[b]fluoranthene | 1.99 | 2.09 | | ug/L | | 105 | 70 - 130 |
| Benzo[g,h,i]perylene | 1.99 | 2.29 | | ug/L | | 115 | 70 - 130 |
| Benzo[k]fluoranthene | 1.99 | 2.10 | | ug/L | | 106 | 70 - 130 |
| beta-BHC | 1.99 | 2.02 | | ug/L | | 101 | 70 - 130 |
| Bromacil | 1.99 | 1.89 | | ug/L | | 95 | 70 - 130 |
| Butachlor | 1.99 | 2.27 | | ug/L | | 114 | 70 - 130 |
| Butylbenzylphthalate | 1.99 | 2.33 | | ug/L | | 117 | 70 - 130 |
| Caffeine | 1.99 | 1.48 | | ug/L | | 75 | 45 - 137 |
| Chlorobenzilate | 1.99 | 2.30 | | ug/L | | 116 | 70 - 130 |
| Chloroneb | 1.99 | 1.91 | | ug/L | | 96 | 70 - 130 |
| Chlorothalonil (Draconil, Bravo) | 1.99 | 2.07 | | ug/L | | 104 | 70 - 130 |
| Chlorpyrifos | 1.99 | 2.29 | | ug/L | | 115 | 70 - 130 |
| Chrysene | 1.99 | 1.93 | | ug/L | | 97 | 70 - 130 |
| delta-BHC | 1.99 | 2.03 | | ug/L | | 102 | 70 - 130 |
| Di(2-ethylhexyl)adipate | 1.99 | 2.23 | | ug/L | | 112 | 70 - 130 |
| Bis(2-ethylhexyl) phthalate | 1.99 | 2.16 | | ug/L | | 108 | 70 - 130 |
| Diazinon (Qualitative) | 1.99 | 2.06 | | ug/L | | 104 | 15 - 132 |
| Dibenz(a,h)anthracene | 1.99 | 2.48 | | ug/L | | 125 | 70 - 130 |
| Diclorvos (DDVP) | 1.99 | 1.99 | | ug/L | | 100 | 70 - 130 |
| Dieldrin | 1.99 | 1.99 | | ug/L | | 100 | 70 - 130 |
| Diethylphthalate | 1.99 | 2.10 | | ug/L | | 106 | 70 - 130 |
| Dimethoate | 1.99 | 1.22 | | ug/L | | 61 | 35 - 100 |
| Dimethylphthalate | 1.99 | 2.12 | | ug/L | | 107 | 70 - 130 |
| Di-n-butyl phthalate | 3.98 | 4.33 | | ug/L | | 109 | 70 - 130 |
| Di-n-octyl phthalate | 1.99 | 1.88 | | ug/L | | 94 | 70 - 130 |
| Endosulfan I (Alpha) | 1.99 | 1.93 | | ug/L | | 97 | 70 - 130 |
| Endosulfan II (Beta) | 1.99 | 2.08 | | ug/L | | 105 | 70 - 130 |
| Endosulfan sulfate | 1.99 | 2.09 | | ug/L | | 105 | 70 - 130 |
| Endrin | 1.99 | 2.38 | | ug/L | | 120 | 70 - 130 |
| Endrin aldehyde | 1.99 | 2.00 | | ug/L | | 101 | 70 - 130 |
| EPTC | 1.99 | 2.00 | | ug/L | | 100 | 70 - 130 |
| Fluoranthene | 1.99 | 2.07 | | ug/L | | 104 | 70 - 130 |

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

**Lab Sample ID: LCS 380-25484/3-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Fluorene | 1.99 | 2.04 | | ug/L | | 103 | 70 - 130 |
| gamma-Chlordane | 1.99 | 1.95 | | ug/L | | 98 | 70 - 130 |
| Heptachlor | 1.99 | 2.07 | | ug/L | | 104 | 70 - 130 |
| Heptachlor epoxide (isomer B) | 1.99 | 1.96 | | ug/L | | 99 | 70 - 130 |
| Hexachlorobenzene | 1.99 | 2.04 | | ug/L | | 103 | 70 - 130 |
| Hexachlorocyclopentadiene | 1.99 | 1.70 | | ug/L | | 85 | 70 - 130 |
| Indeno[1,2,3-cd]pyrene | 1.99 | 2.44 | | ug/L | | 123 | 70 - 130 |
| Isophorone | 1.99 | 1.97 | | ug/L | | 99 | 70 - 130 |
| Lindane | 1.99 | 2.01 | | ug/L | | 101 | 70 - 130 |
| Malathion | 1.99 | 2.25 | | ug/L | | 113 | 70 - 130 |
| Methoxychlor | 1.99 | 1.95 | | ug/L | | 98 | 70 - 130 |
| Metolachlor | 1.99 | 2.16 | | ug/L | | 109 | 70 - 130 |
| Metribuzin | 1.99 | 1.81 | | ug/L | | 91 | 70 - 130 |
| Molinate | 1.99 | 1.93 | | ug/L | | 97 | 70 - 130 |
| Naphthalene | 1.99 | 1.86 | | ug/L | | 93 | 70 - 130 |
| Parathion | 1.99 | 2.13 | | ug/L | | 107 | 70 - 130 |
| Pendimethalin (Penoxaline) | 1.99 | 1.86 | | ug/L | | 93 | 70 - 130 |
| Phenanthrene | 1.99 | 2.08 | | ug/L | | 105 | 70 - 130 |
| Propachlor | 1.99 | 2.09 | | ug/L | | 105 | 70 - 130 |
| Pyrene | 1.99 | 2.20 | | ug/L | | 111 | 70 - 130 |
| Simazine | 1.99 | 2.14 | | ug/L | | 107 | 70 - 130 |
| Terbacil | 1.99 | 2.10 | | ug/L | | 106 | 70 - 130 |
| Terbuthylazine | 1.99 | 1.87 | | ug/L | | 94 | 70 - 130 |
| Thiobencarb | 1.99 | 2.29 | | ug/L | | 115 | 70 - 130 |
| trans-Nonachlor | 1.99 | 2.11 | | ug/L | | 106 | 70 - 130 |
| Trifluralin | 1.99 | 1.84 | | ug/L | | 93 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *2-Nitro-m-xylene* | *99* | | *70 - 130* |
| *Triphenylphosphate* | *108* | | *70 - 130* |
| *Perylene-d12* | *98* | | *70 - 130* |

**Lab Sample ID: LCSD 380-25484/4-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 2,4'-DDD | 1.99 | 2.04 | | ug/L | | 102 | 70 - 130 | 4 | 20 |
| 2,4'-DDE | 1.99 | 1.98 | | ug/L | | 100 | 70 - 130 | 5 | 20 |
| 2,4'-DDT | 1.99 | 1.85 | | ug/L | | 93 | 70 - 130 | 5 | 20 |
| 2,4-Dinitrotoluene | 1.99 | 2.03 | | ug/L | | 102 | 70 - 130 | 5 | 20 |
| 2,6-Dinitrotoluene | 1.99 | 1.97 | | ug/L | | 99 | 70 - 130 | 2 | 20 |
| 4,4'-DDD | 1.99 | 1.85 | | ug/L | | 93 | 70 - 130 | 7 | 20 |
| 4,4'-DDE | 1.99 | 1.86 | | ug/L | | 94 | 70 - 130 | 8 | 20 |
| 4,4'-DDT | 1.99 | 1.67 | | ug/L | | 84 | 70 - 130 | 6 | 20 |
| Acenaphthene | 1.99 | 1.92 | | ug/L | | 97 | 70 - 130 | 2 | 20 |
| Acenaphthylene | 1.99 | 1.90 | | ug/L | | 96 | 70 - 130 | 1 | 20 |
| Acetochlor | 1.99 | 2.14 | | ug/L | | 108 | 70 - 130 | 2 | 20 |

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

**Lab Sample ID: LCSD 380-25484/4-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alachlor | | | 1.99 | 1.95 | | ug/L | | 98 | 70 - 130 | 4 | 20 |
| alpha-BHC | | | 1.99 | 1.90 | | ug/L | | 96 | 70 - 130 | 4 | 20 |
| alpha-Chlordane | | | 1.99 | 1.93 | | ug/L | | 97 | 70 - 130 | 0 | 20 |
| Anthracene | | | 1.99 | 2.03 | | ug/L | | 102 | 70 - 130 | 2 | 20 |
| Atrazine | | | 1.99 | 1.98 | | ug/L | | 100 | 70 - 130 | 6 | 20 |
| Benz(a)anthracene | | | 1.99 | 1.80 | | ug/L | | 91 | 70 - 130 | 8 | 20 |
| Benzo[a]pyrene | | | 1.99 | 2.01 | | ug/L | | 101 | 70 - 130 | 3 | 20 |
| Benzo[b]fluoranthene | | | 1.99 | 2.08 | | ug/L | | 105 | 70 - 130 | 0 | 20 |
| Benzo[g,h,i]perylene | | | 1.99 | 2.39 | | ug/L | | 120 | 70 - 130 | 4 | 20 |
| Benzo[k]fluoranthene | | | 1.99 | 2.18 | | ug/L | | 110 | 70 - 130 | 4 | 20 |
| beta-BHC | | | 1.99 | 1.93 | | ug/L | | 97 | 70 - 130 | 4 | 20 |
| Bromacil | | | 1.99 | 1.75 | | ug/L | | 88 | 70 - 130 | 8 | 20 |
| Butachlor | | | 1.99 | 2.24 | | ug/L | | 113 | 70 - 130 | 1 | 20 |
| Butylbenzylphthalate | | | 1.99 | 2.24 | | ug/L | | 113 | 70 - 130 | 4 | 20 |
| Caffeine | | | 1.99 | 1.46 | | ug/L | | 73 | 45 - 137 | 2 | 20 |
| Chlorobenzilate | | | 1.99 | 2.18 | | ug/L | | 110 | 70 - 130 | 6 | 20 |
| Chloroneb | | | 1.99 | 1.87 | | ug/L | | 94 | 70 - 130 | 2 | 20 |
| Chlorothalonil (Draconil, Bravo) | | | 1.99 | 1.92 | | ug/L | | 97 | 70 - 130 | 7 | 20 |
| Chlorpyrifos | | | 1.99 | 2.22 | | ug/L | | 112 | 70 - 130 | 3 | 20 |
| Chrysene | | | 1.99 | 1.92 | | ug/L | | 97 | 70 - 130 | 0 | 20 |
| delta-BHC | | | 1.99 | 1.91 | | ug/L | | 96 | 70 - 130 | 6 | 20 |
| Di(2-ethylhexyl)adipate | | | 1.99 | 2.11 | | ug/L | | 106 | 70 - 130 | 5 | 20 |
| Bis(2-ethylhexyl) phthalate | | | 1.99 | 2.03 | | ug/L | | 102 | 70 - 130 | 6 | 20 |
| Diazinon (Qualitative) | | | 1.99 | 2.05 | | ug/L | | 103 | 15 - 132 | 1 | 20 |
| Dibenz(a,h)anthracene | | | 1.99 | 2.46 | | ug/L | | 124 | 70 - 130 | 1 | 20 |
| Diclorvos (DDVP) | | | 1.99 | 2.03 | | ug/L | | 102 | 70 - 130 | 2 | 20 |
| Dieldrin | | | 1.99 | 1.91 | | ug/L | | 96 | 70 - 130 | 4 | 20 |
| Diethylphthalate | | | 1.99 | 2.08 | | ug/L | | 105 | 70 - 130 | 1 | 20 |
| Dimethoate | | | 1.99 | 1.22 | | ug/L | | 62 | 35 - 100 | 0 | 20 |
| Dimethylphthalate | | | 1.99 | 2.13 | | ug/L | | 107 | 70 - 130 | 0 | 20 |
| Di-n-butyl phthalate | | | 3.97 | 4.27 | | ug/L | | 107 | 70 - 130 | 1 | 20 |
| Di-n-octyl phthalate | | | 1.99 | 1.75 | | ug/L | | 88 | 70 - 130 | 7 | 20 |
| Endosulfan I (Alpha) | | | 1.99 | 1.87 | | ug/L | | 94 | 70 - 130 | 3 | 20 |
| Endosulfan II (Beta) | | | 1.99 | 1.95 | | ug/L | | 98 | 70 - 130 | 7 | 20 |
| Endosulfan sulfate | | | 1.99 | 2.02 | | ug/L | | 102 | 70 - 130 | 3 | 20 |
| Endrin | | | 1.99 | 2.29 | | ug/L | | 115 | 70 - 130 | 4 | 20 |
| Endrin aldehyde | | | 1.99 | 1.95 | | ug/L | | 98 | 70 - 130 | 3 | 20 |
| EPTC | | | 1.99 | 2.04 | | ug/L | | 103 | 70 - 130 | 2 | 20 |
| Fluoranthene | | | 1.99 | 1.93 | | ug/L | | 97 | 70 - 130 | 7 | 20 |
| Fluorene | | | 1.99 | 2.04 | | ug/L | | 103 | 70 - 130 | 0 | 20 |
| gamma-Chlordane | | | 1.99 | 1.94 | | ug/L | | 98 | 70 - 130 | 1 | 20 |
| Heptachlor | | | 1.99 | 2.03 | | ug/L | | 102 | 70 - 130 | 2 | 20 |
| Heptachlor epoxide (isomer B) | | | 1.99 | 1.87 | | ug/L | | 94 | 70 - 130 | 5 | 20 |
| Hexachlorobenzene | | | 1.99 | 2.00 | | ug/L | | 100 | 70 - 130 | 2 | 20 |
| Hexachlorocyclopentadiene | | | 1.99 | 1.73 | | ug/L | | 87 | 70 - 130 | 2 | 20 |
| Indeno[1,2,3-cd]pyrene | | | 1.99 | 2.47 | | ug/L | | 124 | 70 - 130 | 1 | 20 |
| Isophorone | | | 1.99 | 2.01 | | ug/L | | 101 | 70 - 130 | 2 | 20 |
| Lindane | | | 1.99 | 1.94 | | ug/L | | 98 | 70 - 130 | 4 | 20 |
| Malathion | | | 1.99 | 2.13 | | ug/L | | 107 | 70 - 130 | 5 | 20 |

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

**Lab Sample ID: LCSD 380-25484/4-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Methoxychlor | 1.99 | 1.91 | | ug/L | | 96 | 70 - 130 | 2 | 20 |
| Metolachlor | 1.99 | 2.07 | | ug/L | | 104 | 70 - 130 | 4 | 20 |
| Metribuzin | 1.99 | 1.68 | | ug/L | | 85 | 70 - 130 | 7 | 20 |
| Molinate | 1.99 | 2.00 | | ug/L | | 101 | 70 - 130 | 3 | 20 |
| Naphthalene | 1.99 | 1.93 | | ug/L | | 97 | 70 - 130 | 4 | 20 |
| Parathion | 1.99 | 1.93 | | ug/L | | 97 | 70 - 130 | 10 | 20 |
| Pendimethalin (Penoxaline) | 1.99 | 1.73 | | ug/L | | 87 | 70 - 130 | 7 | 20 |
| Phenanthrene | 1.99 | 2.04 | | ug/L | | 103 | 70 - 130 | 2 | 20 |
| Propachlor | 1.99 | 2.05 | | ug/L | | 103 | 70 - 130 | 2 | 20 |
| Pyrene | 1.99 | 2.06 | | ug/L | | 104 | 70 - 130 | 7 | 20 |
| Simazine | 1.99 | 2.00 | | ug/L | | 101 | 70 - 130 | 6 | 20 |
| Terbacil | 1.99 | 1.92 | | ug/L | | 97 | 70 - 130 | 9 | 20 |
| Terbuthylazine | 1.99 | 1.75 | | ug/L | | 88 | 70 - 130 | 6 | 20 |
| Thiobencarb | 1.99 | 2.20 | | ug/L | | 111 | 70 - 130 | 4 | 20 |
| trans-Nonachlor | 1.99 | 1.96 | | ug/L | | 99 | 70 - 130 | 7 | 20 |
| Trifluralin | 1.99 | 1.78 | | ug/L | | 90 | 70 - 130 | 3 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *2-Nitro-m-xylene* | *100* | | *70 - 130* |
| *Triphenylphosphate* | *102* | | *70 - 130* |
| *Perylene-d12* | *96* | | *70 - 130* |

**Lab Sample ID: MRL 380-25484/2-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 2,4'-DDD | 0.0995 | 0.134 | | ug/L | | 134 | 50 - 150 |
| 2,4'-DDE | 0.0995 | 0.0888 | J | ug/L | | 89 | 50 - 150 |
| 2,4'-DDT | 0.0995 | 0.0817 | J | ug/L | | 82 | 50 - 150 |
| 2,4-Dinitrotoluene | 0.0995 | 0.0778 | J | ug/L | | 78 | 50 - 150 |
| 2,6-Dinitrotoluene | 0.0995 | 0.0834 | J | ug/L | | 84 | 50 - 150 |
| 4,4'-DDD | 0.0995 | 0.0857 | J | ug/L | | 86 | 50 - 150 |
| 4,4'-DDE | 0.0995 | 0.0964 | J | ug/L | | 97 | 50 - 150 |
| 4,4'-DDT | 0.0995 | 0.118 | | ug/L | | 119 | 50 - 150 |
| Acenaphthene | 0.0995 | 0.0947 | J | ug/L | | 95 | 50 - 150 |
| Acenaphthylene | 0.0995 | 0.0861 | J | ug/L | | 87 | 50 - 150 |
| Acetochlor | 0.0497 | 0.0494 | J | ug/L | | 99 | 50 - 150 |
| Alachlor | 0.0497 | 0.0506 | | ug/L | | 102 | 50 - 150 |
| alpha-BHC | 0.0995 | 0.119 | | ug/L | | 119 | 50 - 150 |
| alpha-Chlordane | 0.0249 | ND | | ug/L | | 113 | 50 - 150 |
| Anthracene | 0.0199 | 0.0230 | | ug/L | | 116 | 50 - 150 |
| Atrazine | 0.0497 | 0.0557 | | ug/L | | 112 | 50 - 150 |
| Benz(a)anthracene | 0.0497 | 0.0372 | J | ug/L | | 75 | 50 - 150 |
| Benzo[a]pyrene | 0.0199 | 0.0164 | J | ug/L | | 83 | 50 - 150 |
| Benzo[b]fluoranthene | 0.0199 | 0.0194 | J | ug/L | | 98 | 50 - 150 |
| Benzo[g,h,i]perylene | 0.0497 | 0.0513 | | ug/L | | 103 | 50 - 150 |
| Benzo[k]fluoranthene | 0.0199 | 0.0179 | J | ug/L | | 90 | 50 - 150 |

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

Job ID: 380-29203-1

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

**Lab Sample ID: MRL 380-25484/2-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| beta-BHC | 0.0995 | 0.114 | | ug/L | | 114 | 50 - 150 |
| Bromacil | 0.0995 | 0.138 | | ug/L | | 139 | 50 - 150 |
| Butachlor | 0.0497 | 0.0662 | | ug/L | | 133 | 50 - 150 |
| Butylbenzylphthalate | 0.149 | 0.309 | J ^3+ | ug/L | | 207 | 50 - 150 |
| Caffeine | 0.0497 | 0.0387 | J | ug/L | | 78 | 50 - 150 |
| Chlorobenzilate | 0.0995 | 0.0964 | J | ug/L | | 97 | 50 - 150 |
| Chloroneb | 0.0995 | 0.108 | | ug/L | | 108 | 50 - 150 |
| Chlorothalonil (Draconil, Bravo) | 0.0995 | 0.131 | | ug/L | | 131 | 50 - 150 |
| Chlorpyrifos | 0.0497 | 0.0566 | | ug/L | | 114 | 50 - 150 |
| Chrysene | 0.0199 | 0.0170 | J | ug/L | | 85 | 50 - 150 |
| delta-BHC | 0.0995 | 0.125 | | ug/L | | 125 | 50 - 150 |
| Di(2-ethylhexyl)adipate | 0.298 | 0.347 | J | ug/L | | 116 | 50 - 150 |
| Bis(2-ethylhexyl) phthalate | 0.597 | 0.664 | | ug/L | | 111 | 50 - 150 |
| Diazinon (Qualitative) | 0.0995 | 0.0939 | J | ug/L | | 94 | 15 - 132 |
| Dibenz(a,h)anthracene | 0.0497 | 0.0515 | | ug/L | | 104 | 50 - 150 |
| Diclorvos (DDVP) | 0.0497 | 0.0575 | | ug/L | | 116 | 50 - 150 |
| Dieldrin | 0.0995 | 0.106 | J | ug/L | | 106 | 50 - 150 |
| Diethylphthalate | 0.149 | 0.159 | J | ug/L | | 107 | 50 - 150 |
| Dimethoate | 0.0995 | 0.0383 | J | ug/L | | 38 | 35 - 100 |
| Dimethylphthalate | 0.298 | 0.311 | J | ug/L | | 104 | 50 - 150 |
| Di-n-butyl phthalate | 0.298 | 0.326 | J | ug/L | | 109 | 49 - 243 |
| Di-n-octyl phthalate | 0.0995 | 0.112 | | ug/L | | 112 | 50 - 150 |
| Endosulfan I (Alpha) | 0.0995 | 0.106 | | ug/L | | 106 | 50 - 150 |
| Endosulfan II (Beta) | 0.0995 | 0.130 | | ug/L | | 130 | 50 - 150 |
| Endosulfan sulfate | 0.0995 | 0.0945 | J | ug/L | | 95 | 50 - 150 |
| Endrin | 0.0995 | 0.135 | | ug/L | | 136 | 50 - 150 |
| Endrin aldehyde | 0.0995 | ND | | ug/L | | 72 | 50 - 150 |
| EPTC | 0.0995 | 0.0918 | J | ug/L | | 92 | 50 - 150 |
| Fluoranthene | 0.0497 | 0.0524 | J | ug/L | | 105 | 50 - 150 |
| Fluorene | 0.0497 | 0.0518 | | ug/L | | 104 | 50 - 150 |
| gamma-Chlordane | 0.0249 | 0.0265 | J | ug/L | | 107 | 50 - 150 |
| Heptachlor | 0.0398 | 0.0548 | | ug/L | | 138 | 50 - 150 |
| Heptachlor epoxide (isomer B) | 0.0497 | 0.0516 | | ug/L | | 104 | 50 - 150 |
| Hexachlorobenzene | 0.0497 | 0.0475 | J | ug/L | | 95 | 50 - 150 |
| Hexachlorocyclopentadiene | 0.0497 | ND | | ug/L | | 70 | 50 - 150 |
| Indeno[1,2,3-cd]pyrene | 0.0497 | 0.0546 | | ug/L | | 110 | 50 - 150 |
| Isophorone | 0.0995 | 0.104 | J | ug/L | | 105 | 50 - 150 |
| Lindane | 0.0398 | 0.0493 | | ug/L | | 124 | 50 - 150 |
| Malathion | 0.0995 | 0.108 | | ug/L | | 108 | 50 - 150 |
| Methoxychlor | 0.0995 | 0.114 | | ug/L | | 115 | 50 - 150 |
| Metolachlor | 0.0497 | 0.0607 | | ug/L | | 122 | 50 - 150 |
| Metribuzin | 0.0497 | 0.0846 | ^3+ | ug/L | | 170 | 50 - 150 |
| Molinate | 0.0995 | 0.0895 | J | ug/L | | 90 | 50 - 150 |
| Naphthalene | 0.0995 | 0.0966 | J | ug/L | | 97 | 50 - 150 |
| Parathion | 0.0995 | 0.120 | | ug/L | | 120 | 50 - 150 |
| Pendimethalin (Penoxaline) | 0.0995 | 0.113 | | ug/L | | 113 | 50 - 150 |
| Phenanthrene | 0.0199 | 0.0263 | J | ug/L | | 132 | 50 - 150 |
| Propachlor | 0.0497 | 0.0554 | | ug/L | | 111 | 50 - 150 |
| Pyrene | 0.0497 | 0.0531 | | ug/L | | 107 | 50 - 150 |

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

**Lab Sample ID: MRL 380-25484/2-A**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | | | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Simazine | | | 0.0497 | 0.0648 | | ug/L | | 130 | 50 - 150 | | |
| Terbacil | | | 0.0995 | 0.109 | | ug/L | | 110 | 50 - 150 | | |
| Terbuthylazine | | | 0.0995 | 0.109 | | ug/L | | 109 | 50 - 150 | | |
| Thiobencarb | | | 0.0995 | 0.128 | J | ug/L | | 128 | 50 - 150 | | |
| trans-Nonachlor | | | 0.0249 | 0.0272 | J | ug/L | | 109 | 50 - 150 | | |
| Trifluralin | | | 0.0995 | 0.107 | | ug/L | | 107 | 50 - 150 | | |

| *Surrogate* | *MRL %Recovery* | *MRL Qualifier* | *Limits* |
|---|---|---|---|
| *2-Nitro-m-xylene* | *99* | | *70 - 130* |
| *Triphenylphosphate* | *107* | | *70 - 130* |
| *Perylene-d12* | *99* | | *70 - 130* |

**Lab Sample ID: 380-29023-B-3-A MS**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4'-DDD | ND | | 1.95 | 2.06 | | ug/L | | 106 | 70 - 130 | | |
| 2,4'-DDE | ND | | 1.95 | 2.08 | | ug/L | | 107 | 70 - 130 | | |
| 2,4'-DDT | ND | | 1.95 | 1.96 | | ug/L | | 101 | 70 - 130 | | |
| 2,4-Dinitrotoluene | ND | | 1.95 | 2.26 | | ug/L | | 116 | 70 - 130 | | |
| 2,6-Dinitrotoluene | ND | | 1.95 | 2.04 | | ug/L | | 105 | 70 - 130 | | |
| 4,4'-DDD | ND | | 1.95 | 1.93 | | ug/L | | 99 | 70 - 130 | | |
| 4,4'-DDE | ND | | 1.95 | 1.97 | | ug/L | | 101 | 70 - 130 | | |
| 4,4'-DDT | ND | | 1.95 | 1.79 | | ug/L | | 92 | 70 - 130 | | |
| Acenaphthene | ND | | 1.95 | 1.91 | | ug/L | | 98 | 70 - 130 | | |
| Acenaphthylene | ND | | 1.95 | 2.01 | | ug/L | | 103 | 70 - 130 | | |
| Acetochlor | ND | | 1.95 | 2.13 | | ug/L | | 109 | 70 - 130 | | |
| Alachlor | ND | | 1.95 | 1.95 | | ug/L | | 100 | 70 - 130 | | |
| alpha-BHC | ND | | 1.95 | 1.95 | | ug/L | | 100 | 70 - 130 | | |
| alpha-Chlordane | ND | | 1.95 | 1.95 | | ug/L | | 100 | 70 - 130 | | |
| Anthracene | ND | | 1.95 | 1.96 | | ug/L | | 101 | 70 - 130 | | |
| Atrazine | ND | | 1.95 | 2.05 | | ug/L | | 105 | 70 - 130 | | |
| Benz(a)anthracene | ND | | 1.95 | 1.94 | | ug/L | | 99 | 70 - 130 | | |
| Benzo[a]pyrene | ND | | 1.95 | 2.01 | | ug/L | | 103 | 70 - 130 | | |
| Benzo[b]fluoranthene | ND | | 1.95 | 2.06 | | ug/L | | 106 | 70 - 130 | | |
| Benzo[g,h,i]perylene | ND | | 1.95 | 2.22 | | ug/L | | 114 | 70 - 130 | | |
| Benzo[k]fluoranthene | ND | | 1.95 | 2.15 | | ug/L | | 110 | 70 - 130 | | |
| beta-BHC | ND | | 1.95 | 1.97 | | ug/L | | 101 | 70 - 130 | | |
| Bromacil | ND | | 1.95 | 1.84 | | ug/L | | 95 | 70 - 130 | | |
| Butachlor | ND | | 1.95 | 2.26 | | ug/L | | 116 | 70 - 130 | | |
| Butylbenzylphthalate | ND | ^3+ | 1.95 | 2.32 | | ug/L | | 119 | 70 - 130 | | |
| Caffeine | ND | | 1.95 | 1.82 | | ug/L | | 93 | 46 - 144 | | |
| Chlorobenzilate | ND | | 1.95 | 2.25 | | ug/L | | 116 | 70 - 130 | | |
| Chloroneb | ND | | 1.95 | 1.89 | | ug/L | | 97 | 70 - 130 | | |
| Chlorothalonil (Draconil, Bravo) | ND | | 1.95 | 1.99 | | ug/L | | 102 | 70 - 130 | | |
| Chlorpyrifos | ND | | 1.95 | 2.26 | | ug/L | | 116 | 70 - 130 | | |
| Chrysene | ND | | 1.95 | 1.91 | | ug/L | | 98 | 70 - 130 | | |

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

**Lab Sample ID: 380-29023-B-3-A MS**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| delta-BHC | ND | | 1.95 | 1.90 | | ug/L | | 98 | 70 - 130 |
| Di(2-ethylhexyl)adipate | ND | | 1.95 | 2.26 | | ug/L | | 116 | 70 - 130 |
| Bis(2-ethylhexyl) phthalate | ND | | 1.95 | 2.12 | | ug/L | | 109 | 70 - 130 |
| Diazinon (Qualitative) | ND | | 1.95 | 2.05 | | ug/L | | 105 | 15 - 132 |
| Dibenz(a,h)anthracene | ND | | 1.95 | 2.40 | | ug/L | | 123 | 70 - 130 |
| Diclorvos (DDVP) | ND | | 1.95 | 1.97 | | ug/L | | 101 | 70 - 130 |
| Dieldrin | ND | | 1.95 | 2.01 | | ug/L | | 103 | 70 - 130 |
| Diethylphthalate | ND | | 1.95 | 2.05 | | ug/L | | 105 | 70 - 130 |
| Dimethoate | ND | | 1.95 | 1.61 | | ug/L | | 83 | 34 - 111 |
| Dimethylphthalate | ND | | 1.95 | 2.10 | | ug/L | | 108 | 70 - 130 |
| Di-n-butyl phthalate | ND | | 3.89 | 4.31 | | ug/L | | 111 | 70 - 130 |
| Di-n-octyl phthalate | ND | | 1.95 | 1.92 | | ug/L | | 99 | 70 - 130 |
| Endosulfan I (Alpha) | ND | | 1.95 | 1.94 | | ug/L | | 99 | 70 - 130 |
| Endosulfan II (Beta) | ND | | 1.95 | 2.05 | | ug/L | | 105 | 70 - 130 |
| Endosulfan sulfate | ND | | 1.95 | 2.08 | | ug/L | | 107 | 70 - 130 |
| Endrin | ND | | 1.95 | 2.39 | | ug/L | | 123 | 70 - 130 |
| Endrin aldehyde | ND | | 1.95 | 1.96 | | ug/L | | 101 | 70 - 130 |
| EPTC | ND | | 1.95 | 2.10 | | ug/L | | 108 | 70 - 130 |
| Fluoranthene | ND | | 1.95 | 2.02 | | ug/L | | 104 | 70 - 130 |
| Fluorene | ND | | 1.95 | 2.03 | | ug/L | | 104 | 70 - 130 |
| gamma-Chlordane | ND | | 1.95 | 1.97 | | ug/L | | 101 | 70 - 130 |
| Heptachlor | ND | | 1.95 | 2.03 | | ug/L | | 104 | 70 - 130 |
| Heptachlor epoxide (isomer B) | ND | | 1.95 | 1.93 | | ug/L | | 99 | 70 - 130 |
| Hexachlorobenzene | ND | | 1.95 | 2.01 | | ug/L | | 103 | 70 - 130 |
| Hexachlorocyclopentadiene | ND | | 1.95 | 1.73 | | ug/L | | 89 | 70 - 130 |
| Indeno[1,2,3-cd]pyrene | ND | | 1.95 | 2.35 | | ug/L | | 121 | 70 - 130 |
| Isophorone | ND | | 1.95 | 1.92 | | ug/L | | 99 | 70 - 130 |
| Lindane | ND | | 1.95 | 1.92 | | ug/L | | 99 | 70 - 130 |
| Malathion | ND | | 1.95 | 2.18 | | ug/L | | 112 | 70 - 130 |
| Methoxychlor | ND | | 1.95 | 1.89 | | ug/L | | 97 | 70 - 130 |
| Metolachlor | ND | | 1.95 | 2.04 | | ug/L | | 105 | 70 - 130 |
| Metribuzin | ND | ^3+ | 1.95 | 1.93 | | ug/L | | 99 | 70 - 130 |
| Molinate | ND | | 1.95 | 2.11 | | ug/L | | 109 | 70 - 130 |
| Naphthalene | ND | | 1.95 | 1.86 | | ug/L | | 96 | 70 - 130 |
| Parathion | ND | | 1.95 | 2.04 | | ug/L | | 105 | 70 - 130 |
| Pendimethalin (Penoxaline) | ND | | 1.95 | 1.86 | | ug/L | | 96 | 70 - 130 |
| Phenanthrene | ND | | 1.95 | 2.04 | | ug/L | | 105 | 70 - 130 |
| Propachlor | ND | | 1.95 | 2.03 | | ug/L | | 104 | 70 - 130 |
| Pyrene | ND | | 1.95 | 2.14 | | ug/L | | 110 | 70 - 130 |
| Simazine | ND | | 1.95 | 2.05 | | ug/L | | 105 | 70 - 130 |
| Terbacil | ND | | 1.95 | 2.02 | | ug/L | | 104 | 70 - 130 |
| Terbuthylazine | ND | | 1.95 | 1.84 | | ug/L | | 94 | 70 - 130 |
| Thiobencarb | ND | | 1.95 | 2.29 | | ug/L | | 117 | 70 - 130 |
| trans-Nonachlor | ND | | 1.95 | 2.09 | | ug/L | | 107 | 70 - 130 |
| Trifluralin | ND | | 1.95 | 1.86 | | ug/L | | 96 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *2-Nitro-m-xylene* | *99* | | *70 - 130* |

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

**Lab Sample ID: 380-29023-B-3-A MS**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| *Triphenylphosphate* | *110* | | *70 - 130* |
| *Perylene-d12* | *102* | | *70 - 130* |

**Lab Sample ID: 380-29023-B-4-A DU**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 25484**

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

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

**Lab Sample ID: 380-29023-B-4-A DU**
**Matrix: Water**
**Analysis Batch: 25689**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 25484**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dimethylphthalate | ND | | | ND | | ug/L | | | | NC | 20 |
| Di-n-butyl phthalate | ND | | | ND | | ug/L | | | | NC | 20 |
| Di-n-octyl phthalate | ND | | | ND | | ug/L | | | | NC | 20 |
| Endosulfan I (Alpha) | ND | | | ND | | ug/L | | | | NC | 20 |
| Endosulfan II (Beta) | ND | | | ND | | ug/L | | | | NC | 20 |
| Endosulfan sulfate | ND | | | ND | | ug/L | | | | NC | 20 |
| Endrin | ND | | | ND | | ug/L | | | | NC | 20 |
| Endrin aldehyde | ND | | | ND | | ug/L | | | | NC | 20 |
| EPTC | ND | | | ND | | ug/L | | | | NC | 20 |
| Fluoranthene | ND | | | ND | | ug/L | | | | NC | 20 |
| Fluorene | ND | | | ND | | ug/L | | | | NC | 20 |
| gamma-Chlordane | ND | | | ND | | ug/L | | | | NC | 20 |
| Heptachlor | ND | | | ND | | ug/L | | | | NC | 20 |
| Heptachlor epoxide (isomer B) | ND | | | ND | | ug/L | | | | NC | 20 |
| Hexachlorobenzene | ND | | | ND | | ug/L | | | | NC | 20 |
| Hexachlorocyclopentadiene | ND | | | ND | | ug/L | | | | NC | 20 |
| Indeno[1,2,3-cd]pyrene | ND | | | ND | | ug/L | | | | NC | 20 |
| Isophorone | ND | | | ND | | ug/L | | | | NC | 20 |
| Lindane | ND | | | ND | | ug/L | | | | NC | 20 |
| Malathion | ND | | | ND | | ug/L | | | | NC | 20 |
| Methoxychlor | ND | | | ND | | ug/L | | | | NC | 20 |
| Metolachlor | ND | | | ND | | ug/L | | | | NC | 20 |
| Metribuzin | ND | ^3+ | | ND | | ug/L | | | | NC | 20 |
| Molinate | ND | | | ND | | ug/L | | | | NC | 20 |
| Naphthalene | ND | | | ND | | ug/L | | | | NC | 20 |
| Parathion | ND | | | ND | | ug/L | | | | NC | 20 |
| Pendimethalin (Penoxaline) | ND | | | ND | | ug/L | | | | NC | 20 |
| Total Permethrin (mixed isomers) | ND | | | ND | | ug/L | | | | NC | 20 |
| Phenanthrene | ND | | | ND | | ug/L | | | | NC | 20 |
| Propachlor | ND | | | ND | | ug/L | | | | NC | 20 |
| Pyrene | ND | | | ND | | ug/L | | | | NC | 20 |
| Simazine | ND | | | ND | | ug/L | | | | NC | 20 |
| Terbacil | ND | | | ND | | ug/L | | | | NC | 20 |
| Terbuthylazine | ND | | | ND | | ug/L | | | | NC | 20 |
| Thiobencarb | ND | | | ND | | ug/L | | | | NC | 20 |
| trans-Nonachlor | ND | | | ND | | ug/L | | | | NC | 20 |
| Trifluralin | ND | | | ND | | ug/L | | | | NC | 20 |

| *Surrogate* | *DU %Recovery* | *DU Qualifier* | *Limits* |
|---|---|---|---|
| *2-Nitro-m-xylene* | *99* | | *70 - 130* |
| *Triphenylphosphate* | *103* | | *70 - 130* |
| *Perylene-d12* | *95* | | *70 - 130* |

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

**Lab Sample ID: 101950-B1**
**Matrix: BlankMatrix**
**Analysis Batch: O-40048**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: O-40048_P**

| Analyte | Blank Result | Blank Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| 1-Methylphenanthrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| 2,3,5-Trimethylnaphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| 2,6-Dimethylnaphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| 2-Methylnaphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Acenaphthene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Acenaphthylene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Anthracene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Benz[a]anthracene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Benzo[a]pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Benzo[b]fluoranthene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Benzo[e]pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Benzo[g,h,i]perylene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Benzo[k]fluoranthene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Biphenyl | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Chrysene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Dibenz[a,h]anthracene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Dibenzo[a,l]pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Dibenzothiophene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Disalicylidenepropanediamine | ND | | 0.1 | 0.05 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Fluoranthene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Fluorene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Naphthalene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Perylene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Phenanthrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |
| Pyrene | ND | | 0.005 | 0.001 | µg/L | | 11/28/22 00:00 | 12/19/22 22:12 | 1 |

| *Surrogate* | *Blank %Recovery* | *Blank Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *(d10-Acenaphthene)* | *81* | | *27 - 133* | *11/28/22 00:00* | *12/19/22 22:12* | *1* |
| *(d10-Phenanthrene)* | *86* | | *43 - 129* | *11/28/22 00:00* | *12/19/22 22:12* | *1* |
| *(d12-Chrysene)* | *87* | | *52 - 144* | *11/28/22 00:00* | *12/19/22 22:12* | *1* |
| *(d12-Perylene)* | *77* | | *36 - 161* | *11/28/22 00:00* | *12/19/22 22:12* | *1* |
| *(d8-Naphthalene)* | *80* | | *25 - 125* | *11/28/22 00:00* | *12/19/22 22:12* | *1* |

**Lab Sample ID: 101950-BS1**
**Matrix: BlankMatrix**
**Analysis Batch: O-40048**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: O-40048_P**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.5 | 0.35 | | µg/L | | 70 | 31 - 128 |
| 1-Methylphenanthrene | 0.5 | 0.425 | | µg/L | | 85 | 66 - 127 |
| 2,3,5-Trimethylnaphthalene | 0.5 | 0.408 | | µg/L | | 82 | 55 - 122 |
| 2,6-Dimethylnaphthalene | 0.5 | 0.365 | | µg/L | | 73 | 48 - 120 |
| 2-Methylnaphthalene | 0.5 | 0.354 | | µg/L | | 71 | 47 - 130 |
| Acenaphthene | 0.5 | 0.388 | | µg/L | | 78 | 53 - 131 |
| Acenaphthylene | 0.5 | 0.367 | | µg/L | | 73 | 43 - 140 |
| Anthracene | 0.5 | 0.422 | | µg/L | | 84 | 58 - 135 |

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

**Lab Sample ID: 101950-BS1**
**Matrix: BlankMatrix**
**Analysis Batch: O-40048**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: O-40048_P**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benz[a]anthracene | | | 0.5 | 0.421 | | µg/L | | 84 | 55 - 145 | | |
| Benzo[a]pyrene | | | 0.5 | 0.386 | | µg/L | | 77 | 51 - 143 | | |
| Benzo[b]fluoranthene | | | 0.5 | 0.388 | | µg/L | | 78 | 46 - 165 | | |
| Benzo[e]pyrene | | | 0.5 | 0.4 | | µg/L | | 80 | 42 - 152 | | |
| Benzo[g,h,i]perylene | | | 0.5 | 0.398 | | µg/L | | 80 | 63 - 133 | | |
| Benzo[k]fluoranthene | | | 0.5 | 0.392 | | µg/L | | 78 | 56 - 145 | | |
| Biphenyl | | | 0.5 | 0.379 | | µg/L | | 76 | 56 - 119 | | |
| Chrysene | | | 0.5 | 0.426 | | µg/L | | 85 | 56 - 141 | | |
| Dibenz[a,h]anthracene | | | 0.5 | 0.371 | | µg/L | | 74 | 55 - 150 | | |
| Dibenzo[a,l]pyrene | | | 0.5 | 0.465 | | µg/L | | 93 | 50 - 150 | | |
| Dibenzothiophene | | | 0.5 | 0.43 | | µg/L | | 86 | 46 - 126 | | |
| Disalicylidenepropanediamine | | | 50 | 48 | | µg/L | | 96 | 50 - 150 | | |
| Fluoranthene | | | 0.5 | 0.406 | | µg/L | | 81 | 60 - 146 | | |
| Fluorene | | | 0.5 | 0.377 | | µg/L | | 75 | 58 - 131 | | |
| Indeno[1,2,3-cd]pyrene | | | 0.5 | 0.359 | | µg/L | | 72 | 50 - 151 | | |
| Naphthalene | | | 0.5 | 0.314 | | µg/L | | 63 | 41 - 126 | | |
| Perylene | | | 0.5 | 0.392 | | µg/L | | 78 | 48 - 141 | | |
| Phenanthrene | | | 0.5 | 0.422 | | µg/L | | 84 | 67 - 127 | | |
| Pyrene | | | 0.5 | 0.425 | | µg/L | | 85 | 54 - 156 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *(d10-Acenaphthene)* | *83* | | *27 - 133* |
| *(d10-Phenanthrene)* | *87* | | *43 - 129* |
| *(d12-Chrysene)* | *92* | | *52 - 144* |
| *(d12-Perylene)* | *87* | | *36 - 161* |
| *(d8-Naphthalene)* | *64* | | *25 - 125* |

**Lab Sample ID: 101950-BS2**
**Matrix: BlankMatrix**
**Analysis Batch: O-40048**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: O-40048_P**

| Analyte | | | Spike Added | LCS DUP Result | LCS DUP Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | | | 0.5 | 0.396 | | µg/L | | 79 | 31 - 128 | 12 | 30 |
| 1-Methylphenanthrene | | | 0.5 | 0.43 | | µg/L | | 86 | 66 - 127 | 1 | 30 |
| 2,3,5-Trimethylnaphthalene | | | 0.5 | 0.441 | | µg/L | | 88 | 55 - 122 | 7 | 30 |
| 2,6-Dimethylnaphthalene | | | 0.5 | 0.412 | | µg/L | | 82 | 48 - 120 | 12 | 30 |
| 2-Methylnaphthalene | | | 0.5 | 0.4 | | µg/L | | 80 | 47 - 130 | 12 | 30 |
| Acenaphthene | | | 0.5 | 0.431 | | µg/L | | 86 | 53 - 131 | 10 | 30 |
| Acenaphthylene | | | 0.5 | 0.383 | | µg/L | | 77 | 43 - 140 | 5 | 30 |
| Anthracene | | | 0.5 | 0.425 | | µg/L | | 85 | 58 - 135 | 1 | 30 |
| Benz[a]anthracene | | | 0.5 | 0.415 | | µg/L | | 83 | 55 - 145 | 1 | 30 |
| Benzo[a]pyrene | | | 0.5 | 0.41 | | µg/L | | 82 | 51 - 143 | 6 | 30 |
| Benzo[b]fluoranthene | | | 0.5 | 0.397 | | µg/L | | 79 | 46 - 165 | 1 | 30 |
| Benzo[e]pyrene | | | 0.5 | 0.407 | | µg/L | | 81 | 42 - 152 | 1 | 30 |
| Benzo[g,h,i]perylene | | | 0.5 | 0.404 | | µg/L | | 81 | 63 - 133 | 1 | 30 |
| Benzo[k]fluoranthene | | | 0.5 | 0.414 | | µg/L | | 83 | 56 - 145 | 6 | 30 |
| Biphenyl | | | 0.5 | 0.408 | | µg/L | | 82 | 56 - 119 | 8 | 30 |
| Chrysene | | | 0.5 | 0.423 | | µg/L | | 85 | 56 - 141 | 0 | 30 |

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

**Lab Sample ID: 101950-BS2**
**Matrix: BlankMatrix**
**Analysis Batch: O-40048**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: O-40048_P**

| Analyte | | | Spike Added | LCS DUP Result | LCS DUP Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dibenz[a,h]anthracene | | | 0.5 | 0.377 | | µg/L | | 75 | 55 - 150 | 1 | 30 |
| Dibenzo[a,l]pyrene | | | 0.5 | 0.422 | | µg/L | | 84 | 50 - 150 | 10 | 30 |
| Dibenzothiophene | | | 0.5 | 0.436 | | µg/L | | 87 | 46 - 126 | 1 | 30 |
| Disalicylidenepropanediamine | | | 50 | 50.8 | | µg/L | | 102 | 50 - 150 | 6 | 30 |
| Fluoranthene | | | 0.5 | 0.419 | | µg/L | | 84 | 60 - 146 | 4 | 30 |
| Fluorene | | | 0.5 | 0.446 | | µg/L | | 89 | 58 - 131 | 17 | 30 |
| Indeno[1,2,3-cd]pyrene | | | 0.5 | 0.356 | | µg/L | | 71 | 50 - 151 | 1 | 30 |
| Naphthalene | | | 0.5 | 0.394 | | µg/L | | 79 | 41 - 126 | 23 | 30 |
| Perylene | | | 0.5 | 0.396 | | µg/L | | 79 | 48 - 141 | 1 | 30 |
| Phenanthrene | | | 0.5 | 0.427 | | µg/L | | 85 | 67 - 127 | 1 | 30 |
| Pyrene | | | 0.5 | 0.435 | | µg/L | | 87 | 54 - 156 | 2 | 30 |

| *Surrogate* | *LCS DUP %Recovery* | *LCS DUP Qualifier* | *Limits* |
|---|---|---|---|
| *(d10-Acenaphthene)* | *86* | | *27 - 133* |
| *(d10-Phenanthrene)* | *89* | | *43 - 129* |
| *(d12-Chrysene)* | *89* | | *52 - 144* |
| *(d12-Perylene)* | *85* | | *36 - 161* |
| *(d8-Naphthalene)* | *79* | | *25 - 125* |

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

**Lab Sample ID: 22VGH7K14B**
**Matrix: WATER**
**Analysis Batch: 22VGH7K14**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| GASOLINE | ND | U | 0.020 | | mg/L | | | 11/28/22 15:18 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *BROMOFLUOROBENZENE* | | | | | *11/28/22 15:18* | *1* |

**Lab Sample ID: 22VGH7K14L**
**Matrix: WATER**
**Analysis Batch: 22VGH7K14**

**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 | 0.463 | | mg/L | | 93 | 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: 22DSL002WB**
**Matrix: WATER**
**Analysis Batch: 22DSL002W**

**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 | | | 12/03/22 17:12 | 1 |
| JP5 | ND | U | 0.050 | | mg/L | | | 12/03/22 17:12 | 1 |
| JP8 | ND | U | 0.050 | | mg/L | | | 12/03/22 17:12 | 1 |
| MOTOR OIL | ND | U | 0.050 | | mg/L | | | 12/03/22 17:12 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *BROMOBENZENE* | | | | | *12/03/22 17:12* | *1* |
| *HEXACOSANE* | | | | | *12/03/22 17:12* | *1* |

**Lab Sample ID: 22DSL002WL**
**Matrix: WATER**
**Analysis Batch: 22DSL002W**

**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 | 2.68 | | mg/L | | 107 | 50 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *BROMOBENZENE* | *103* | | *60 - 130* |
| *HEXACOSANE* | *104* | | *60 - 130* |

**Lab Sample ID: 22J5L002WL**
**Matrix: WATER**
**Analysis Batch: 22DSL002W**

**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 | 2.79 | | mg/L | | 112 | 30 - 160 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *BROMOBENZENE* | *95* | | *60 - 130* |
| *HEXACOSANE* | *99* | | *60 - 130* |

**Lab Sample ID: 22J8L002WL**
**Matrix: WATER**
**Analysis Batch: 22DSL002W**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JP8 | | | 2.50 | 2.99 | | mg/L | | 120 | 30 - 160 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *BROMOBENZENE* | *89* | | *60 - 130* |
| *HEXACOSANE* | *105* | | *60 - 130* |

## GC/MS Semi VOA

### Prep Batch: 25484

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-29203-1 | MOANALUA WELLS | Total/NA | Drinking Water | 525.2 | |
| MB 380-25484/1-A | Method Blank | Total/NA | Water | 525.2 | |
| LCS 380-25484/3-A | Lab Control Sample | Total/NA | Water | 525.2 | |
| LCSD 380-25484/4-A | Lab Control Sample Dup | Total/NA | Water | 525.2 | |
| MRL 380-25484/2-A | Lab Control Sample | Total/NA | Water | 525.2 | |
| 380-29023-B-3-A MS | Matrix Spike | Total/NA | Water | 525.2 | |
| 380-29023-B-4-A DU | Duplicate | Total/NA | Water | 525.2 | |

### Analysis Batch: 25689

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-29203-1 | MOANALUA WELLS | Total/NA | Drinking Water | 525.2 | 25484 |
| MB 380-25484/1-A | Method Blank | Total/NA | Water | 525.2 | 25484 |
| LCS 380-25484/3-A | Lab Control Sample | Total/NA | Water | 525.2 | 25484 |
| LCSD 380-25484/4-A | Lab Control Sample Dup | Total/NA | Water | 525.2 | 25484 |
| MRL 380-25484/2-A | Lab Control Sample | Total/NA | Water | 525.2 | 25484 |
| 380-29023-B-3-A MS | Matrix Spike | Total/NA | Water | 525.2 | 25484 |
| 380-29023-B-4-A DU | Duplicate | Total/NA | Water | 525.2 | 25484 |

## Subcontract

### Analysis Batch: O-40048

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-29203-1 | MOANALUA WELLS | Total/NA | Drinking Water | 625 PAH Physis LL (EAL) + TICs | O-40048_P |
| 101950-B1 | Method Blank | Total/NA | BlankMatrix | 625 PAH Physis LL (EAL) + TICs | O-40048_P |
| 101950-BS1 | Lab Control Sample | Total/NA | BlankMatrix | 625 PAH Physis LL (EAL) + TICs | O-40048_P |
| 101950-BS2 | Lab Control Sample Dup | Total/NA | BlankMatrix | 625 PAH Physis LL (EAL) + TICs | O-40048_P |

### Analysis Batch: 22DSL002W

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-29203-1 | MOANALUA WELLS | Total/NA | Drinking Water | 8015 LL DRO/MRO/JP5/JP8 | |
| 22DSL002WB | Method Blank | Total/NA | WATER | 8015 LL DRO/MRO/JP5/JP8 | |
| 22DSL002WL | Lab Control Sample | Total/NA | WATER | 8015 LL DRO/MRO/JP5/JP8 | |
| 22J5L002WL | Lab Control Sample | Total/NA | WATER | 8015 LL DRO/MRO/JP5/JP8 | |
| 22J8L002WL | Lab Control Sample | Total/NA | WATER | 8015 LL DRO/MRO/JP5/JP8 | |

### Analysis Batch: 22VGH7K14

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-29203-1 | MOANALUA WELLS | Total/NA | Drinking Water | 8015 Gas (Purgeable) LL (EAL) | |

## Subcontract (Continued)

### Analysis Batch: 22VGH7K14 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-29203-2 | TB MOANALUA WELLS | Total/NA | Water | 8015 Gas (Purgeable) LL (EAL) | |
| 22VGH7K14B | Method Blank | Total/NA | WATER | 8015 Gas (Purgeable) LL (EAL) | |
| 22VGH7K14L | Lab Control Sample | Total/NA | WATER | 8015 Gas (Purgeable) LL (EAL) | |

### Prep Batch: O-40048_P

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-29203-1 | MOANALUA WELLS | Total/NA | Drinking Water | EPA_625 | |
| 101950-B1 | Method Blank | Total/NA | BlankMatrix | EPA_625 | |
| 101950-BS1 | Lab Control Sample | Total/NA | BlankMatrix | EPA_625 | |
| 101950-BS2 | Lab Control Sample Dup | Total/NA | BlankMatrix | EPA_625 | |

# Lab Chronicle

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

Job ID: 380-29203-1

## Client Sample ID: MOANALUA WELLS

**Lab Sample ID: 380-29203-1**

**Date Collected: 11/21/22 10:25**

**Matrix: Drinking Water**

**Date Received: 11/23/22 10:00**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 525.2 | | | 25484 | OTM3 | EA MON | 12/01/22 06:49 |
| Total/NA | Analysis | 525.2 | | 1 | 25689 | Q8LA | EA MON | 12/05/22 15:06 |
| Total/NA | Prep | EPA_625 | | 1 | O-40048_P | | | 11/28/22 00:00 |
| Total/NA | Analysis | 625 PAH Physis LL (EAL) + TICs | | 1 | O-40048 | YC | | 12/20/22 03:21 |
| Total/NA | Analysis | 8015 Gas (Purgeable) LL (EAL) | | 1 | 22VGH7K14 | SCerva | | 11/28/22 23:49 |
| Total/NA | Analysis | 8015 LL DRO/MRO/JP5/JP8 | | 1 | 22DSL002W | SDees | | 12/03/22 21:30 |

## Client Sample ID: TB MOANALUA WELLS

**Lab Sample ID: 380-29203-2**

**Date Collected: 11/21/22 10:25**

**Matrix: Water**

**Date Received: 11/23/22 10:00**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8015 Gas (Purgeable) LL (EAL) | | 1 | 22VGH7K14 | SCerva | | 11/29/22 00:25 |

**Laboratory References:**

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

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

# Accreditation/Certification Summary

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

Job ID: 380-29203-1

## Laboratory: Eurofins Eaton Monrovia

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

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

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

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

## Laboratory: Eurofins Eaton Monrovia (Continued)

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|

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

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

# Method Summary

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

Job ID: 380-29203-1

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

**Protocol References:**

EPA = US Environmental Protection Agency

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

**Laboratory References:**

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

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

# Sample Summary

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

Job ID: 380-29203-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | PWSID Number |
|---|---|---|---|---|---|
| 380-29203-1 | MOANALUA WELLS | Drinking Water | 11/21/22 10:25 | 11/23/22 10:00 | HI0000331 |
| 380-29203-2 | TB MOANALUA WELLS | Water | 11/21/22 10:25 | 11/23/22 10:00 | |

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

Date: 12-16-2022
EMAX Batch No.: 22K267

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-29203

Enclosed is the Laboratory report for samples received on 11/28/22.
The data reported relate only to samples listed below :

| Sample ID | Control # | Col Date | Matrix | Analysis |
|---|---|---|---|---|
| 380-29203-1 | K267-01 | 11/21/22 | WATER | TPH GASOLINE<br>TPH |
| 380-29203-2 | K267-02 | 11/21/22 | WATER | TPH GASOLINE |

The results are summarized on the following pages.

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

Sincerely yours,

Caspar J. Pang
Laboratory Director



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

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

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

22K267

# Chain of Custody Record

eurofins | Environment Testing

22K267

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Arada, Rachelle | Carrier Tracking No(s): | COC No: 380-29444.1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: Rachelle.Arada@et.eurofinsus.com | State of Origin: Hawaii | Page: Page 1 of 1 |
| Company: EMAX Laboratories Inc | | Accreditations Required (See note): State - Hawaii | | Job #: 380-29203-1 |
| Address: 3051 Fujita Street, , | Due Date Requested: 12/9/2022 | | | |
| City: Torrance | TAT Requested (days): | | | |
| State, Zip: CA, 90505 | PO #: | | | |
| Phone: | WO #: | | | |
| Email: | Project #: 38001111 | | | |
| Project Name: RED-HILL | SSOW#: | | | |
| Site: Honolulu BWS Sites | | | | |

**Analysis Requested**

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

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | SUB (8015 Gas (Purgeable) LL (EAL))/ 8015 Gas (Purgeable) LL (EAL) | SUB (8015 LL DRO/MRO/JP5/JP8)/ 8015 LL DRO/MRO/JP5/JP8 | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | |
| 1 MOANALUA WELLS (380-29203-1) | 11/21/22 | 10:25 Hawaiian | | Water | | | X | X | 6 | See Attached Instructions |
| 2 TB MOANALUA WELLS (380-29203-2) | 11/21/22 | 10:25 Hawaiian | | Water | | | X | | 2 | See Attached Instructions |

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon out 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 complicance to Eurofins Eaton Analytical, LLC.

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Empty Kit Relinquished by: | | Date: | | Time: | | Method of Shipment: | |
| Relinquished by: | | Date/Time: 11/28/22 1252 | Company ETA | Received by: | | Date/Time: 11-28-22 13x | Company ETA |
| Relinquished by: | | Date/Time: 11-28-22 1520 | Company ETA | Received by: | | Date/Time: 11/28/22 1520 | Company EMAX |
| Relinquished by: | | Date/Time: | Company | Received by: | | Date/Time: | Company |
| Custody Seals Intact: | Custody Seal No.: | | | Cooler Temperature(s) °C and Other Remarks: | Temp. 2.8 | | |

EMAX LABORATORIES, INC.

REFERENCE: EMAX-SM02 Rev. 12

# SAMPLE RECEIPT FORM 1

| Type of Delivery | Airbill / Tracking Number | ECN 22K267 |
|---|---|---|
| ☐ Fedex ☐ UPS ☐ GSO ☐ Others | | Recipient Jhowin Zamora |
| ☐ EMAX Courier ☑ Client Delivery | | Date 11/28/22 Time 1520 |

## COC INSPECTION

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

Note: _____

## PACKAGING INSPECTION

| | | | | | |
|---|---|---|---|---|---|
| Container | ☑ Cooler | ☐ Box | ☐ Other | | |
| Condition | ☐ Custody Seal | ☐ Intact | ☐ Damaged | | |
| Packaging | ☑ Bubble Pack | ☐ Styrofoam | ☐ Popcorn | ☐ Sufficient | ☐ _____ |
| Temperatures (Cool, ≤6 °C but not frozen) | ☑ Cooler 1 2.8 °C | ☐ Cooler 2 _____ °C | ☐ Cooler 3 _____ °C | ☐ Cooler 4 _____ °C | ☐ Cooler 5 _____ °C |
| | ☐ Cooler 6 _____ °C | ☐ Cooler 7 _____ °C | ☐ Cooler 8 _____ °C | ☐ Cooler 9 _____ °C | ☐ Cooler 10 _____ °C |
| *Thermometer:* | *A - S/N* _____ | *B - S/N* 210760237 | *C - S/N* _____ | *D - S/N* 210760272 | |

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

Note: _____

## DISCREPANCIES

| LabSampleID | LabSampleContainerID | Code | ClientSample Label ID / Information | Corrective Action |
|---|---|---|---|---|
| 2 | 7 | D22 | ① 11/11/22 ② 11/21/22 | R1 |
| 2 | 8 | D23 | ① 11/11/22 12pm ② 11/21/22 1025 | |

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

MB 11/29/22

## NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? ☐ YES ☑ NO

☐ Continue to next page.

## LEGEND:

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

| Code | Description-Sample Management |
|---|---|
| D13 | Out-of Holding Time |
| D14 | Bubble is >6mm |
| D15 | No trip blank in cooler |
| D16 | Preservation not indicated in _____ |
| D17 | Preservation mismatch COC vs label |
| D18 | Insufficient chemical preservative |
| D19 | Insufficient Sample |
| D20 | No filtration info for dissolved analysis |
| D21 | No sample for moisture determination |
| D22 | 2 dates |
| D23 | 2 dates 2 times |
| D24 | |

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

REVIEWS:

Sample Labeling Jhowin Zamora Date 11/28/22 11/28/22

SRF Date 11/29/22

PM MB Date 11/29/22

**AREA FAST**
COURIER SERVICE

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

INVOICE 20151
CALL NO
REF. NO
DATE 11-28-22

CHARGE TO EuroFins

FROM: Eaton Andy
Monrovia

TO: E. Max Lab
3035 Fujita St
Torrance

| PACKAGES | DESCRIPTION | | CHARGES |
|---|---|---|---|
| | | REGULAR | |
| | | RUSH | |
| 1 | Cooler Spls | A.S.A.P. | |
| | | MISC. CHARGES | |
| | | WAITING TIME | |
| | | WEIGHT | |
| | | TOTAL CHARGE | |

DRIVER: _____ PICK UP TIME: _____ DELIVERY TIME: 1:20

Received By: _____

## REPORTING CONVENTIONS

### DATA QUALIFIERS:

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

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

### ACRONYMS AND ABBREVIATIONS:

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

### DATES

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-29203

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

SDG#: 22K267

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-29203

SDG : 22K267

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

A total of two(2) water samples were received on 11/28/22 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VGH7K14B - 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. VGH7K14L/VGH7K14C 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 K264-01M/K264-01S. Refer to Matrix QC summary form for details.

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

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL
Project : 380-29203

SDG NO. : 22K267
Instrument ID : H7

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | VGH7K14B | 1 | NA | 11/28/2215:18 | 11/28/2215:18 | AK28005A | AK28004A | 22VGH7K14 | Method Blank |
| LCS1W | VGH7K14L | 1 | NA | 11/28/2215:56 | 11/28/2215:56 | AK28006A | AK28004A | 22VGH7K14 | Lab Control Sample (LCS) |
| LCD1W | VGH7K14C | 1 | NA | 11/28/2216:33 | 11/28/2216:33 | AK28007A | AK28004A | 22VGH7K14 | LCS Duplicate |
| 380-29203-1 | K267-01 | 1 | NA | 11/28/2223:49 | 11/28/2223:49 | AK28019A | AK28015A | 22VGH7K14 | Field Sample |
| 380-29203-2 | K267-02 | 1 | NA | 11/29/2200:25 | 11/29/2200:25 | AK28020A | AK28015A | 22VGH7K14 | Field Sample |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

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

| | | | |
|---|---|---|---|
| Client | : EUROFINS EATON ANALYTICAL | Date Collected: | 11/21/22 10:25 |
| Project | : 380-29203 | Date Received: | 11/28/22 |
| Batch No. | : 22K267 | Date Extracted: | 11/28/22 23:49 |
| Sample ID | : 380-29203-1 | Date Analyzed: | 11/28/22 23:49 |
| Lab Samp ID: | K267-01 | Dilution Factor: | 1 |
| Lab File ID: | AK28019A | Matrix: | WATER |
| Ext Btch ID: | 22VGH7K14 | % Moisture: | NA |
| Calib. Ref.: | AK28015A | Instrument ID: | H7 |

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

| SURROGATE PARAMETERS | RESULT | SPK_AMT | %RECOVERY | QC LIMIT |
|---|---|---|---|---|
| Bromofluorobenzene | 0.0395 | 0.0400 | 99 | 60-140 |

Notes:

| Parameter | H-C Range |
|---|---|
| Gasoline | C6-C10 |

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

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

| | | | |
|---|---|---|---|
| Client | : EUROFINS EATON ANALYTICAL | Date Collected: | 11/21/22 10:25 |
| Project | : 380-29203 | Date Received: | 11/28/22 |
| Batch No. | : 22K267 | Date Extracted: | 11/29/22 00:25 |
| Sample ID | : 380-29203-2 | Date Analyzed: | 11/29/22 00:25 |
| Lab Samp ID: | K267-02 | Dilution Factor: | 1 |
| Lab File ID: | AK28020A | Matrix: | WATER |
| Ext Btch ID: | 22VGH7K14 | % Moisture: | NA |
| Calib. Ref.: | AK28015A | Instrument ID: | H7 |

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

| SURROGATE PARAMETERS | RESULT | SPK_AMT | %RECOVERY | QC LIMIT |
|---|---|---|---|---|
| Bromofluorobenzene | 0.0399 | 0.0400 | 100 | 60-140 |

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

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

# QC SUMMARIES

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

| | | | |
|---|---|---|---|
| Client | : EUROFINS EATON ANALYTICAL | Date Collected: | 11/28/22 15:18 |
| Project | : 380-29203 | Date Received: | 11/28/22 |
| Batch No. | : 22K267 | Date Extracted: | 11/28/22 15:18 |
| Sample ID | : MBLK1W | Date Analyzed: | 11/28/22 15:18 |
| Lab Samp ID: | VGH7K14B | Dilution Factor: | 1 |
| Lab File ID: | AK28005A | Matrix: | WATER |
| Ext Btch ID: | 22VGH7K14 | % Moisture: | NA |
| Calib. Ref.: | AK28004A | Instrument ID: | H7 |

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

| SURROGATE PARAMETERS | RESULT | SPK_AMT | %RECOVERY | QC LIMIT |
|---|---|---|---|---|
| Bromofluorobenzene | 0.0378 | 0.0400 | 95 | 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 : 380-29203
BATCH NO. : 22K267
METHOD : 5030B/8015B

| | | | |
|---|---|---|---|
| MATRIX | : WATER | | % MOISTURE:NA |
| DILUTION FACTOR | : 1 | 1 | 1 |
| SAMPLE ID | : MBLK1W | LCS1W | LCD1W |
| LAB SAMPLE ID | : VGH7K14B | VGH7K14L | VGH7K14C |
| LAB FILE ID | : AK28005A | AK28006A | AK28007A |
| DATE PREPARED | : 11/28/22 15:18 | 11/28/22 15:56 | 11/28/22 16:33 |
| DATE ANALYZED | : 11/28/22 15:18 | 11/28/22 15:56 | 11/28/22 16:33 |
| PREP BATCH | : 22VGH7K14 | 22VGH7K14 | 22VGH7K14 |
| CALIBRATION REF | : AK28004A | AK28004A | AK28004A |

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 | 0.463 | 93 | 0.500 | 0.506 | 101 | 9 | 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 | 0.0504 | 126 | 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 : 380-29023
BATCH NO. : 22K264
METHOD : 5030B/8015B

| | | | |
|---|---|---|---|
| MATRIX | : WATER | | % MOISTURE:NA |
| DILUTION FACTOR: | 1 | 1 | 1 |
| SAMPLE ID | : 380-29023-1 | 380-29023-1MS | 380-29023-1MSD |
| LAB SAMPLE ID | : K264-01 | K264-01M | K264-01S |
| LAB FILE ID | : AK28008A | AK28009A | AK28010A |
| DATE PREPARED | : 11/28/22 17:10 | 11/28/22 17:47 | 11/28/22 18:23 |
| DATE ANALYZED | : 11/28/22 17:10 | 11/28/22 17:47 | 11/28/22 18:23 |
| PREP BATCH | : 22VGH7K14 | 22VGH7K14 | 22VGH7K14 |
| CALIBRATION REF: | AK28004A | AK28004A | AK28004A |

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 | 0.483 | 97 | 0.500 | 0.470 | 94 | 3 | 50-130 | 30 |

| SURROGATE PARAMETER | SpikeAmt (mg/L) | MSResult (mg/L) | MSRec (%) | SpikeAmt (mg/L) | MSDResult (mg/L) | MSDRec (%) | QCLimit (%) |
|---|---|---|---|---|---|---|---|
| Bromofluorobenzene | 0.0400 | 0.0464 | 116 | 0.0400 | 0.0458 | 115 | 60-140 |

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-29203

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 22K267

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-29203

SDG : 22K267

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 11/28/22 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

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

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSL002WB - 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. DSL002WL/DSL002WC were within LCS limits. Refer to LCS summary form for details.

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

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

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-29203

SDG : 22K267

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 11/28/22 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

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

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSL002WB - 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. J5L002WL/J5L002WC were within LCS limits. Refer to LCS summary form for details.

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

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

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-29203

SDG : 22K267

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 11/28/22 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

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

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSL002WB - 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. J8L002WL/J8L002WC were within LCS limits. Refer to LCS summary form for details.

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

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

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-29203

SDG NO. : 22K267
Instrument ID : D5

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | DSL002WB | 1 | NA | 12/03/2217:12 | 12/01/2213:30 | LL03017A | LL03003A | 22DSL002W | Method Blank |
| LCS1W | DSL002WL | 1 | NA | 12/03/2217:31 | 12/01/2213:30 | LL03018A | LL03003A | 22DSL002W | Lab Control Sample (LCS) |
| LCD1W | DSL002WC | 1 | NA | 12/03/2217:49 | 12/01/2213:30 | LL03019A | LL03003A | 22DSL002W | LCS Duplicate |
| 380-29203-1 | K267-01 | 1 | NA | 12/03/2221:30 | 12/01/2213:30 | LL03031A | LL03024A | 22DSL002W | Field Sample |

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-29203

SDG NO. : 22K267
Instrument ID : D5

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | DSL002WB | 1 | NA | 12/03/2217:12 | 12/01/2213:30 | LL03017A | LL03004A | 22DSL002W | Method Blank |
| LCS1W | J5L002WL | 1 | NA | 12/03/2218:08 | 12/01/2213:30 | LL03020A | LL03004A | 22DSL002W | Lab Control Sample (LCS) |
| LCD1W | J5L002WC | 1 | NA | 12/03/2218:26 | 12/01/2213:30 | LL03021A | LL03004A | 22DSL002W | LCS Duplicate |
| 380-29203-1 | K267-01 | 1 | NA | 12/03/2221:30 | 12/01/2213:30 | LL03031A | LL03025A | 22DSL002W | Field Sample |

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-29203

SDG NO. : 22K267
Instrument ID : D5

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | DSL002WB | 1 | NA | 12/03/2217:12 | 12/01/2213:30 | LL03017A | LL03005A | 22DSL002W | Method Blank |
| LCS1W | J8L002WL | 1 | NA | 12/03/2218:44 | 12/01/2213:30 | LL03022A | LL03005A | 22DSL002W | Lab Control Sample (LCS) |
| LCD1W | J8L002WC | 1 | NA | 12/03/2219:03 | 12/01/2213:30 | LL03023A | LL03005A | 22DSL002W | LCS Duplicate |
| 380-29203-1 | K267-01 | 1 | NA | 12/03/2221:30 | 12/01/2213:30 | LL03031A | LL03026A | 22DSL002W | Field Sample |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : EUROFINS EATON ANALYTICAL | Date Collected: | 11/21/22 10:25 |
| Project | : 380-29203 | Date Received: | 11/28/22 |
| Batch No. | : 22K267 | Date Extracted: | 12/01/22 13:30 |
| Sample ID | : 380-29203-1 | Date Analyzed: | 12/03/22 21:30 |
| Lab Samp ID: | 22K267-01 | Dilution Factor: | 1 |
| Lab File ID: | LL03031A | Matrix: | WATER |
| Ext Btch ID: | 22DSL002W | % Moisture: | NA |
| Calib. Ref.: | LL03024A | Instrument ID: | D5 |

| PARAMETERS | RESULTS (mg/L) | RL (mg/L) | MDL (mg/L) |
|---|---|---|---|
| Diesel | ND | 0.027 | 0.013 |
| Motor Oil | ND | 0.053 | 0.027 |

| SURROGATE PARAMETERS | RESULT | SPK_AMT | %RECOVERY | QC LIMIT |
|---|---|---|---|---|
| Bromobenzene | 0.354 | 0.530 | 67 | 60-130 |
| Hexacosane | 0.141 | 0.132 | 107 | 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 | : 940ml | Final Volume | : 5ml |
| Prepared by | : POreto | Analyzed by | : SDeeso |

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : EUROFINS EATON ANALYTICAL | Date Collected: | 11/21/22 10:25 |
| Project | : 380-29203 | Date Received: | 11/28/22 |
| Batch No. | : 22K267 | Date Extracted: | 12/01/22 13:30 |
| Sample ID | : 380-29203-1 | Date Analyzed: | 12/03/22 21:30 |
| Lab Samp ID: | 22K267-01 | Dilution Factor: | 1 |
| Lab File ID: | LL03031A | Matrix: | WATER |
| Ext Btch ID: | 22DSL002W | % Moisture: | NA |
| Calib. Ref.: | LL03025A | Instrument ID: | D5 |

| PARAMETERS | RESULTS (mg/L) | RL (mg/L) | MDL (mg/L) |
|---|---|---|---|
| JP5 | ND | 0.053 | 0.027 |

| SURROGATE PARAMETERS | RESULT | SPK_AMT | %RECOVERY | QC LIMIT |
|---|---|---|---|---|
| Bromobenzene | 0.354 | 0.530 | 67 | 60-130 |
| Hexacosane | 0.141 | 0.132 | 107 | 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 : 940ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : EUROFINS EATON ANALYTICAL | Date Collected: | 11/21/22 10:25 |
| Project | : 380-29203 | Date Received: | 11/28/22 |
| Batch No. | : 22K267 | Date Extracted: | 12/01/22 13:30 |
| Sample ID | : 380-29203-1 | Date Analyzed: | 12/03/22 21:30 |
| Lab Samp ID: | 22K267-01 | Dilution Factor: | 1 |
| Lab File ID: | LL03031A | Matrix: | WATER |
| Ext Btch ID: | 22DSL002W | % Moisture: | NA |
| Calib. Ref.: | LL03026A | Instrument ID: | D5 |

| PARAMETERS | RESULTS (mg/L) | RL (mg/L) | MDL (mg/L) |
|---|---|---|---|
| JP8 | ND | 0.053 | 0.027 |

| SURROGATE PARAMETERS | RESULT | SPK_AMT | %RECOVERY | QC LIMIT |
|---|---|---|---|---|
| Bromobenzene | 0.354 | 0.530 | 67 | 60-130 |
| Hexacosane | 0.141 | 0.132 | 107 | 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 : 940ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

# QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : EUROFINS EATON ANALYTICAL | Date Collected: | 12/01/22 13:30 |
| Project | : 380-29203 | Date Received: | 12/01/22 |
| Batch No. | : 22K267 | Date Extracted: | 12/01/22 13:30 |
| Sample ID | : MBLK1W | Date Analyzed: | 12/03/22 17:12 |
| Lab Samp ID: | DSL002WB | Dilution Factor: | 1 |
| Lab File ID: | LL03017A | Matrix: | WATER |
| Ext Btch ID: | 22DSL002W | % Moisture: | NA |
| Calib. Ref.: | LL03003A | 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 | 0.436 | 0.500 | 87 | 60-130 |
| Hexacosane | 0.138 | 0.125 | 110 | 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 | : POreto | Analyzed by | : SDeeso |

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-29203
BATCH NO. : 22K267
METHOD : 3520C/8015B

| | | | |
|---|---|---|---|
| MATRIX | : WATER | | % MOISTURE:NA |
| DILUTION FACTOR | : 1 | 1 | 1 |
| SAMPLE ID | : MBLK1W | LCS1W | LCD1W |
| LAB SAMPLE ID | : DSL002WB | DSL002WL | DSL002WC |
| LAB FILE ID | : LL03017A | LL03018A | LL03019A |
| DATE PREPARED | : 12/01/22 13:30 | 12/01/22 13:30 | 12/01/22 13:30 |
| DATE ANALYZED | : 12/03/22 17:12 | 12/03/22 17:31 | 12/03/22 17:49 |
| PREP BATCH | : 22DSL002W | 22DSL002W | 22DSL002W |
| CALIBRATION REF | : LL03003A | LL03003A | LL03003A |

ACCESSION:

| PARAMETERS | MBResult (mg/L) | SpikeAmt (mg/L) | LCSResult (mg/L) | LCSRec (%) | SpikeAmt (mg/L) | LCDResult (mg/L) | LCDRec (%) | RPD (%) | QCLimit (%) | MaxRPD (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel | ND | 2.50 | 2.68 | 107 | 2.50 | 2.66 | 106 | 1 | 50-130 | 30 |

| SURROGATE PARAMETERS | SpikeAmt (mg/L) | LCSResult (mg/L) | LCSRec (%) | SpikeAmt (mg/L) | LCDResult (mg/L) | LCDRec (%) | QCLimit (%) |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 0.500 | 0.513 | 103 | 0.500 | 0.509 | 102 | 60-130 |
| Hexacosane | 0.125 | 0.130 | 104 | 0.125 | 0.139 | 111 | 60-130 |

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

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : EUROFINS EATON ANALYTICAL | Date Collected: | 12/01/22 13:30 |
| Project | : 380-29203 | Date Received: | 12/01/22 |
| Batch No. | : 22K267 | Date Extracted: | 12/01/22 13:30 |
| Sample ID | : MBLK1W | Date Analyzed: | 12/03/22 17:12 |
| Lab Samp ID: | DSL002WB | Dilution Factor: | 1 |
| Lab File ID: | LL03017A | Matrix: | WATER |
| Ext Btch ID: | 22DSL002W | % Moisture: | NA |
| Calib. Ref.: | LL03004A | 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 | 0.436 | 0.500 | 87 | 60-130 |
| Hexacosane | 0.138 | 0.125 | 110 | 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 : POreto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-29203
BATCH NO. : 22K267
METHOD : 3520C/8015B

| | | | |
|---|---|---|---|
| MATRIX | : WATER | | % MOISTURE:NA |
| DILUTION FACTOR: | 1 | 1 | 1 |
| SAMPLE ID | : MBLK1W | LCS1W | LCD1W |
| LAB SAMPLE ID | : DSL002WB | J5L002WL | J5L002WC |
| LAB FILE ID | : LL03017A | LL03020A | LL03021A |
| DATE PREPARED | : 12/01/22 13:30 | 12/01/22 13:30 | 12/01/22 13:30 |
| DATE ANALYZED | : 12/03/22 17:12 | 12/03/22 18:08 | 12/03/22 18:26 |
| PREP BATCH | : 22DSL002W | 22DSL002W | 22DSL002W |
| CALIBRATION REF: | LL03004A | LL03004A | LL03004A |

ACCESSION:

| PARAMETERS | MBResult (mg/L) | SpikeAmt (mg/L) | LCSResult (mg/L) | LCSRec (%) | SpikeAmt (mg/L) | LCDResult (mg/L) | LCDRec (%) | RPD (%) | QCLimit (%) | MaxRPD (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5 | ND | 2.50 | 2.79 | 112 | 2.50 | 2.80 | 112 | 0 | 30-160 | 30 |

| SURROGATE PARAMETERS | SpikeAmt (mg/L) | LCSResult (mg/L) | LCSRec (%) | SpikeAmt (mg/L) | LCDResult (mg/L) | LCDRec (%) | QCLimit (%) |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 0.500 | 0.473 | 95 | 0.500 | 0.520 | 104 | 60-130 |
| Hexacosane | 0.125 | 0.124 | 99 | 0.125 | 0.130 | 104 | 60-130 |

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

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : EUROFINS EATON ANALYTICAL | Date Collected: | 12/01/22 13:30 |
| Project | : 380-29203 | Date Received: | 12/01/22 |
| Batch No. | : 22K267 | Date Extracted: | 12/01/22 13:30 |
| Sample ID | : MBLK1W | Date Analyzed: | 12/03/22 17:12 |
| Lab Samp ID: | DSL002WB | Dilution Factor: | 1 |
| Lab File ID: | LL03017A | Matrix: | WATER |
| Ext Btch ID: | 22DSL002W | % Moisture: | NA |
| Calib. Ref.: | LL03005A | 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 | 0.436 | 0.500 | 87 | 60-130 |
| Hexacosane | 0.138 | 0.125 | 110 | 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 : POreto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-29203
BATCH NO. : 22K267
METHOD : 3520C/8015B

| | | | |
|---|---|---|---|
| MATRIX | : WATER | | % MOISTURE:NA |
| DILUTION FACTOR | : 1 | 1 | 1 |
| SAMPLE ID | : MBLK1W | LCS1W | LCD1W |
| LAB SAMPLE ID | : DSL002WB | J8L002WL | J8L002WC |
| LAB FILE ID | : LL03017A | LL03022A | LL03023A |
| DATE PREPARED | : 12/01/22 13:30 | 12/01/22 13:30 | 12/01/22 13:30 |
| DATE ANALYZED | : 12/03/22 17:12 | 12/03/22 18:44 | 12/03/22 19:03 |
| PREP BATCH | : 22DSL002W | 22DSL002W | 22DSL002W |
| CALIBRATION REF | : LL03005A | LL03005A | LL03005A |

ACCESSION:

| PARAMETERS | MBResult (mg/L) | SpikeAmt (mg/L) | LCSResult (mg/L) | LCSRec (%) | SpikeAmt (mg/L) | LCDResult (mg/L) | LCDRec (%) | RPD (%) | QCLimit (%) | MaxRPD (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| JP8 | ND | 2.50 | 2.99 | 120 | 2.50 | 2.99 | 120 | 0 | 30-160 | 30 |

| SURROGATE PARAMETERS | SpikeAmt (mg/L) | LCSResult (mg/L) | LCSRec (%) | SpikeAmt (mg/L) | LCDResult (mg/L) | LCDRec (%) | QCLimit (%) |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 0.500 | 0.444 | 89 | 0.500 | 0.505 | 101 | 60-130 |
| Hexacosane | 0.125 | 0.131 | 105 | 0.125 | 0.133 | 106 | 60-130 |

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

December 28, 2022

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

Project Name: RED-HILL Project # 38001111 Job # 380-29023-1
Physis Project ID: 1407003-342

Dear Rosalynn,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 11/29/2022. A total of 1 sample was received for analysis in accordance with the attached chain of custody (COC). Per the COC, the sample was analyzed for:

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

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

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

Regards,

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

# PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-342

RED-HILL Project # 38001111 Job # 380-29023-1

Total Samples: 1

| PHYSIS ID | Sample ID | Description | Date | Time | Matrix | Sample Type |
|---|---|---|---|---|---|---|
| 101951 | MOANALUA WELLS | 380-29203-1 | 11/21/2022 | 10:25 | Samplewater | Grab |



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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 |


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# QUALITY ASSURANCE SUMMARY

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

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

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

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

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

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

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

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

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

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



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

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

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

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


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# PHYSIS QUALIFIER CODES

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


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# CASE NARRATIVE

## QUALIFIER NOTES

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

**ND**

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

# ANALYTICAL REPORT

PHYSIS Project ID: 1407003-342
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-29023-1

# Base/Neutral Extractable Compounds

| ANALYTE | Method | Units | RESULT | DF | MDL | RL | Fraction | QA CODE | Batch ID | Date Processed | Date Analyzed |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: 101951-R1** | **MOANALUA WELLS 380-29203-1** | | **Matrix: Samplewater** | | | | **Sampled:** | **21-Nov-22 10:25** | | **Received:** | **28-Nov-22** |
| Disalicylidenepropanediamine | EPA 625.1 | µg/L | ND | 1 | 0.05 | 0.1 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |

# Polynuclear Aromatic Hydrocarbons

| ANALYTE | Method | Units | RESULT | DF | MDL | RL | Fraction | QA CODE | Batch ID | Date Processed | Date Analyzed |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: 101951-R1** | **MOANALUA WELLS 380-29203-1** | | **Matrix: Samplewater** | | | | **Sampled: 21-Nov-22 10:25** | | | **Received: 28-Nov-22** | |
| (d10-Acenaphthene) | EPA 625.1 | % Recovery | 77 | 1 | | | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| (d10-Phenanthrene) | EPA 625.1 | % Recovery | 82 | 1 | | | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| (d12-Chrysene) | EPA 625.1 | % Recovery | 85 | 1 | | | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| (d12-Perylene) | EPA 625.1 | % Recovery | 80 | 1 | | | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| (d8-Naphthalene) | EPA 625.1 | % Recovery | 72 | 1 | | | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| 1-Methylnaphthalene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| 1-Methylphenanthrene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| 2,3,5-Trimethylnaphthalene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| 2,6-Dimethylnaphthalene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| 2-Methylnaphthalene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Acenaphthene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Acenaphthylene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Anthracene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Benz[a]anthracene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Benzo[a]pyrene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Benzo[b]fluoranthene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Benzo[e]pyrene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Benzo[g,h,i]perylene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Benzo[k]fluoranthene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Biphenyl | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Chrysene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| D benz[a,h]anthracene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| D benzo[a,l]pyrene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| D benzothiophene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |

**PHYSIS Project ID:** 1407003-342
**Client:** Eurofins Eaton Analytical
**Project:** RED-HILL Project # 38001111 Job # 380-29023-1

# Polynuclear Aromatic Hydrocarbons

| ANALYTE | Method | Units | RESULT | DF | MDL | RL | Fraction | QA CODE | Batch ID | Date Processed | Date Analyzed |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Fluorene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Indeno[1,2,3-cd]pyrene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Naphthalene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Perylene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Phenanthrene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |
| Pyrene | EPA 625.1 | µg/L | ND | 1 | 0.001 | 0.005 | Total | | O-40048 | 28-Nov-22 | 20-Dec-22 |

# QUALITY CONTROL REPORT

ENVIRONMENTAL LABORATORIES, INC.

*Innovative Solutions for Nature*

# Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

| ANALYTE | FRACTION | RESULT | DF | MDL | RL | UNITS | SPIKE LEVEL | SOURCE RESULT | ACCURACY % | ACCURACY LIMITS | | PRECISION % | PRECISION LIMITS | QA CODEc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: 101950-B1** | **QAQC Procedural Blank** | | | | | **Matrix: BlankMatrix** | | **Sampled:** | | | | | **Received:** | |
| | | Method: EPA 625.1 | | | | Batch ID: O-40048 | | Prepared: 28-Nov-22 | | | | | Analyzed: 19-Dec-22 | |
| Disalicylidenepropanediamin | Total | ND | 1 | 0.05 | 0.1 | µg/L | | | | | | | | |
| **Sample ID: 101950-BS1** | **QAQC Procedural Blank** | | | | | **Matrix: BlankMatrix** | | **Sampled:** | | | | | **Received:** | |
| | | Method: EPA 625.1 | | | | Batch ID: O-40048 | | Prepared: 28-Nov-22 | | | | | Analyzed: 19-Dec-22 | |
| Disalicylidenepropanediamin | Total | 48 | 1 | 0.05 | 0.1 | µg/L | 50 | 0 | 96 | 50 - 150% | PASS | | | |
| **Sample ID: 101950-BS2** | **QAQC Procedural Blank** | | | | | **Matrix: BlankMatrix** | | **Sampled:** | | | | | **Received:** | |
| | | Method: EPA 625.1 | | | | Batch ID: O-40048 | | Prepared: 28-Nov-22 | | | | | Analyzed: 20-Dec-22 | |
| Disalicylidenepropanediamin | Total | 50.8 | 1 | 0.05 | 0.1 | µg/L | 50 | 0 | 102 | 50 - 150% | PASS | 6 | 30 PASS | |

# Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

| ANALYTE | FRACTION | RESULT | DF | MDL | RL | UNITS | SPIKE LEVEL | SOURCE RESULT | ACCURACY % | ACCURACY LIMITS | PRECISION % | PRECISION LIMITS | QA CODEc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: 101950-B1** | **QAQC Procedural Blank** | | | | | **Matrix: BlankMatrix** | | **Sampled:** | | | | **Received:** | |
| | Method: EPA 625.1 | | | | | Batch ID: O-40048 | | Prepared: 28-Nov-22 | | | | Analyzed: 19-Dec-22 | |
| (d10-Acenaphthene) | Total | 81 | 1 | | | % Recovery | 100 | 81 | 27 - 133% | PASS | | | |
| (d10-Phenanthrene) | Total | 86 | 1 | | | % Recovery | 100 | 86 | 43 - 129% | PASS | | | |
| (d12-Chrysene) | Total | 87 | 1 | | | % Recovery | 100 | 87 | 52 - 144% | PASS | | | |
| (d12-Perylene) | Total | 77 | 1 | | | % Recovery | 100 | 77 | 36 - 161% | PASS | | | |
| (d8-Naphthalene) | Total | 80 | 1 | | | % Recovery | 100 | 80 | 25 - 125% | PASS | | | |
| 1-Methylnaphthalene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| 1-Methylphenanthrene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| 2,3,5-Trimethylnaphthalene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| 2,6-Dimethylnaphthalene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| 2-Methylnaphthalene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Acenaphthene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Acenaphthylene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Anthracene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Benz[a]anthracene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Benzo[a]pyrene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Benzo[b]fluoranthene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Benzo[e]pyrene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Benzo[g,h,i]perylene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Benzo[k]fluoranthene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Biphenyl | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Chrysene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Dibenz[a,h]anthracene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Dibenzo[a,l]pyrene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |
| Dibenzothiophene | Total | ND | 1 | 0.001 | 0.005 | µg/L | | | | | | | |

PHYSIS Project ID: 1407003-342
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-29023-1

# Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

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

# Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

| ANALYTE | FRACTION | RESULT | DF | MDL | RL | UNITS | SPIKE LEVEL | SOURCE RESULT | ACCURACY % | ACCURACY LIMITS | PRECISION % | PRECISION LIMITS | QA CODEc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: 101950-BS1** | **QAQC Procedural Blank** | | | | | **Matrix: BlankMatrix** | | **Sampled:** | | | | **Received:** | |
| | | Method: EPA 625.1 | | | | Batch ID: O-40048 | | Prepared: 28-Nov-22 | | | | Analyzed: 19-Dec-22 | |
| (d10-Acenaphthene) | Total | 83 | 1 | | | % Recovery | 100 | 0 | 83 | 27 - 133% | PASS | | |
| (d10-Phenanthrene) | Total | 87 | 1 | | | % Recovery | 100 | 0 | 87 | 43 - 129% | PASS | | |
| (d12-Chrysene) | Total | 92 | 1 | | | % Recovery | 100 | 0 | 92 | 52 - 144% | PASS | | |
| (d12-Perylene) | Total | 87 | 1 | | | % Recovery | 100 | 0 | 87 | 36 - 161% | PASS | | |
| (d8-Naphthalene) | Total | 64 | 1 | | | % Recovery | 100 | 0 | 64 | 25 - 125% | PASS | | |
| 1-Methylnaphthalene | Total | 0.35 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 70 | 31 - 128% | PASS | | |
| 1-Methylphenanthrene | Total | 0.425 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 85 | 66 - 127% | PASS | | |
| 2,3,5-Trimethylnaphthalene | Total | 0.408 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 82 | 55 - 122% | PASS | | |
| 2,6-Dimethylnaphthalene | Total | 0.365 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 73 | 48 - 120% | PASS | | |
| 2-Methylnaphthalene | Total | 0.354 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 71 | 47 - 130% | PASS | | |
| Acenaphthene | Total | 0.388 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 78 | 53 - 131% | PASS | | |
| Acenaphthylene | Total | 0.367 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 73 | 43 - 140% | PASS | | |
| Anthracene | Total | 0.422 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 84 | 58 - 135% | PASS | | |
| Benz[a]anthracene | Total | 0.421 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 84 | 55 - 145% | PASS | | |
| Benzo[a]pyrene | Total | 0.386 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 77 | 51 - 143% | PASS | | |
| Benzo[b]fluoranthene | Total | 0.388 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 78 | 46 - 165% | PASS | | |
| Benzo[e]pyrene | Total | 0.4 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 80 | 42 - 152% | PASS | | |
| Benzo[g,h,i]perylene | Total | 0.398 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 80 | 63 - 133% | PASS | | |
| Benzo[k]fluoranthene | Total | 0.392 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 78 | 56 - 145% | PASS | | |
| Biphenyl | Total | 0.379 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 76 | 56 - 119% | PASS | | |
| Chrysene | Total | 0.426 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 85 | 56 - 141% | PASS | | |
| Dibenz[a,h]anthracene | Total | 0.371 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 74 | 55 - 150% | PASS | | |
| Dibenzo[a,l]pyrene | Total | 0.465 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 93 | 50 - 150% | PASS | | |
| Dibenzothiophene | Total | 0.43 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 86 | 46 - 126% | PASS | | |

PHYSIS Project ID: 1407003-342
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-29023-1

# Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

| ANALYTE | FRACTION | RESULT | DF | MDL | RL | UNITS | SPIKE LEVEL | SOURCE RESULT | ACCURACY % | ACCURACY LIMITS | | PRECISION % | PRECISION LIMITS | QA CODEc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene | Total | 0.406 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 81 | 60 - 146% | PASS | | | |
| Fluorene | Total | 0.377 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 75 | 58 - 131% | PASS | | | |
| Indeno[1,2,3-cd]pyrene | Total | 0.359 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 72 | 50 - 151% | PASS | | | |
| Naphthalene | Total | 0.314 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 63 | 41 - 126% | PASS | | | |
| Perylene | Total | 0.392 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 78 | 48 - 141% | PASS | | | |
| Phenanthrene | Total | 0.422 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 84 | 67 - 127% | PASS | | | |
| Pyrene | Total | 0.425 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 85 | 54 - 156% | PASS | | | |

# Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

| ANALYTE | FRACTION | RESULT | DF | MDL | RL | UNITS | SPIKE LEVEL | SOURCE RESULT | ACCURACY % | ACCURACY LIMITS | | PRECISION % | PRECISION LIMITS | | QA CODEc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: 101950-BS2** | **QAQC Procedural Blank** | | | | | **Matrix: BlankMatrix** | | **Sampled:** | | | | | **Received:** | | |
| | | Method: EPA 625.1 | | | | Batch ID: O-40048 | | Prepared: 28-Nov-22 | | | | Analyzed: 20-Dec-22 | | | |
| (d10-Acenaphthene) | Total | 86 | 1 | | | % Recovery | 100 | 0 | 86 | 27 - 133% | PASS | 4 | 30 | PASS | |
| (d10-Phenanthrene) | Total | 89 | 1 | | | % Recovery | 100 | 0 | 89 | 43 - 129% | PASS | 2 | 30 | PASS | |
| (d12-Chrysene) | Total | 89 | 1 | | | % Recovery | 100 | 0 | 89 | 52 - 144% | PASS | 3 | 30 | PASS | |
| (d12-Perylene) | Total | 85 | 1 | | | % Recovery | 100 | 0 | 85 | 36 - 161% | PASS | 2 | 30 | PASS | |
| (d8-Naphthalene) | Total | 79 | 1 | | | % Recovery | 100 | 0 | 79 | 25 - 125% | PASS | 21 | 30 | PASS | |
| 1-Methylnaphthalene | Total | 0.396 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 79 | 31 - 128% | PASS | 12 | 30 | PASS | |
| 1-Methylphenanthrene | Total | 0.43 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 86 | 66 - 127% | PASS | 1 | 30 | PASS | |
| 2,3,5-Trimethylnaphthalene | Total | 0.441 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 88 | 55 - 122% | PASS | 7 | 30 | PASS | |
| 2,6-Dimethylnaphthalene | Total | 0.412 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 82 | 48 - 120% | PASS | 12 | 30 | PASS | |
| 2-Methylnaphthalene | Total | 0.4 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 80 | 47 - 130% | PASS | 12 | 30 | PASS | |
| Acenaphthene | Total | 0.431 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 86 | 53 - 131% | PASS | 10 | 30 | PASS | |
| Acenaphthylene | Total | 0.383 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 77 | 43 - 140% | PASS | 5 | 30 | PASS | |
| Anthracene | Total | 0.425 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 85 | 58 - 135% | PASS | 1 | 30 | PASS | |
| Benz[a]anthracene | Total | 0.415 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 83 | 55 - 145% | PASS | 1 | 30 | PASS | |
| Benzo[a]pyrene | Total | 0.41 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 82 | 51 - 143% | PASS | 6 | 30 | PASS | |
| Benzo[b]fluoranthene | Total | 0.397 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 79 | 46 - 165% | PASS | 1 | 30 | PASS | |
| Benzo[e]pyrene | Total | 0.407 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 81 | 42 - 152% | PASS | 1 | 30 | PASS | |
| Benzo[g,h,i]perylene | Total | 0.404 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 81 | 63 - 133% | PASS | 1 | 30 | PASS | |
| Benzo[k]fluoranthene | Total | 0.414 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 83 | 56 - 145% | PASS | 6 | 30 | PASS | |
| Biphenyl | Total | 0.408 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 82 | 56 - 119% | PASS | 8 | 30 | PASS | |
| Chrysene | Total | 0.423 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 85 | 56 - 141% | PASS | 0 | 30 | PASS | |
| Dibenz[a,h]anthracene | Total | 0.377 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 75 | 55 - 150% | PASS | 1 | 30 | PASS | |
| Dibenzo[a,l]pyrene | Total | 0.422 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 84 | 50 - 150% | PASS | 10 | 30 | PASS | |
| Dibenzothiophene | Total | 0.436 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 87 | 46 - 126% | PASS | 1 | 30 | PASS | |

PHYSIS Project ID: 1407003-342
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-29023-1

# Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

| ANALYTE | FRACTION | RESULT | DF | MDL | RL | UNITS | SPIKE LEVEL | SOURCE RESULT | ACCURACY % | ACCURACY LIMITS | | PRECISION % | PRECISION LIMITS | | QA CODEc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene | Total | 0.419 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 84 | 60 - 146% | PASS | 4 | 30 | PASS | |
| Fluorene | Total | 0.446 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 89 | 58 - 131% | PASS | 17 | 30 | PASS | |
| Indeno[1,2,3-cd]pyrene | Total | 0.356 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 71 | 50 - 151% | PASS | 1 | 30 | PASS | |
| Naphthalene | Total | 0.394 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 79 | 41 - 126% | PASS | 23 | 30 | PASS | |
| Perylene | Total | 0.396 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 79 | 48 - 141% | PASS | 1 | 30 | PASS | |
| Phenanthrene | Total | 0.427 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 85 | 67 - 127% | PASS | 1 | 30 | PASS | |
| Pyrene | Total | 0.435 | 1 | 0.001 | 0.005 | µg/L | 0.5 | 0 | 87 | 54 - 156% | PASS | 2 | 30 | PASS | |

# TENTATIVELY IDENTIFIED COMPOUNDS

**Sample ID: 101951**

| RT | Area Pct | Concentration (ng/L) | Library/ID | Cas Number | Match Qual |
|---|---|---|---|---|---|
| 36.3619 | 3.8777 | 1111 | Anthracene-D10- | 1719-06-8 | 94 |
| 10.9595 | 1.8436 | 528 | Cyclobutanecarboxylic acid, 2-propenyl ester | 1000282-60-3 | 89 |
| 10.9595 | 1.8325 | 525 | Oxalic acid, cyclohexyl pentyl ester | 1000309-30-6 | 90 |
| 10.5804 | 0.7209 | 207 | Hydroperoxide, 1-ethylbutyl | 24254-56-6 | 82 |
| 33.0471 | 0.6827 | 196 | Benzoic acid, 2-ethylhexyl ester | 5444-75-7 | 99 |
| 13.3244 | 0.6133 | 176 | Succinimide | 123-56-8 | 99 |
| 10.7056 | 0.5763 | 165 | Hydroperoxide, 1-methylpentyl | 24254-55-5 | 83 |
| 11.3117 | 0.4944 | 142 | 1-Butene, 2,3,3-trimethyl- | 594-56-9 | 90 |

Concentration estimated using the response for Anthracene-d10

**Sample ID: Lab Blank B1_40048**

| RT | Area Pct | Concentration (ng/L) | Library/ID | Cas Number | Match Qual |
|---|---|---|---|---|---|
| 36.3600 | 3.4869 | 1111 | Anthracene-D10- | 1719-06-8 | 95 |
| 10.9629 | 1.6569 | 528 | Cyclobutanecarboxylic acid, 2-propenyl ester | 1000282-60-3 | 89 |
| 10.5849 | 0.7227 | 230 | Hydroperoxide, 1-ethylbutyl | 24254-56-6 | 83 |
| 10.7092 | 0.5577 | 178 | Hydroperoxide, 1-methylpentyl | 24254-55-5 | 86 |
| 33.0518 | 0.5200 | 166 | Benzoic acid, 2-ethylhexyl ester | 5444-75-7 | 98 |
| 11.3189 | 0.4741 | 151 | Oxalic acid, cyclohexyl isobutyl ester | 1000309-30-4 | 89 |

Concentration estimated using the response for Anthracene-d10

# CHAIN OF CUSTODY

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

# Chain of Custody Record

eurofins | Environment Testing

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Arada, Rachelle | Carrier Tracking No(s): | COC No: 380-29445.1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: Rachelle.Arada@et.eurofinsus.com | State of Origin: Hawaii | Page: Page 1 of 1 |
| Company: Physis Environmental Laboratories | | Accreditations Required (See note): State - Hawaii | | Job #: 380-29203-1 |
| Address: 1904 Wright Circle, | Due Date Requested: 12/9/2022 | | | |
| City: Anaheim | TAT Requested (days): | | | |
| State, Zip: CA, 92806 | | | | |
| Phone: | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: RED-HILL | Project #: 38001111 | | | |
| Site: Honolulu BWS Sites | SSOW#: | | | |

**Analysis Requested**

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

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | |
| MOANALUA WELLS (380-29203-1) | 11/21/22 | 10:25 Hawaiian | | Water | | | X | 2 | See Attached Instructions |

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

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

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

| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|---|
| 1 | [signature] | 11-28-22 1245 | EAL | [signature] | 11-28-22 13 | EAL |
| 2 | [signature] | 11-28-22 14130 | | [signature] | 11-28-22 1430 | |
| 3 | | | | | | |

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

Ver: 06/08/2021

# Shipping Order Form

eurofins | Environment Testing


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

2/1/2023

**Shipping Order ID: 20061** **Ship Via: FedEx** **Due On: 11/28/2022 11:59:00PM**

**Ship To Information**

*Project Manager:*

*Company Name:* *Physis Environmental Laboratories*
*Attention:* *Shipping/Receiving*
*Address 1:* *1904 Wright Circle*
*Address 2:*
*Address 3:*
*City:* *Anaheim*
*State:* *CA*
*Zip:* *92806*
*Phone #:*
*Project Ref:*

**Notes to Bottle/Shipping Department**

Shipping Method: **Standard packing**

- ☑ Ready to Fill
- ☐ Preprinted COC
  - ☐ Number of COC Copies
- ☐ Seals on Bottle
- ☐ Seals on Coolers
- ☐ Priority
- ☐ Return Shipment Labels
  - ☐ Prepaid Return Monrovia, CA (Suite 100)
- ☐ Short Hold Times
- ☑ Temperature Control
- ☐ Rush



**Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.**

## Bottle Order Information

*Bottle Order:*
*Bottle Order #:*
*Request From Client:* 11/28/2022
*Date Order Posted:*
*Order Status:* *Ready To Process*
*Prepared By:*
***Deliver By Date:*** ***11/28/2022 11:59:00PM***
*Lab Project Number:*
*PWSID:*

## Order Completion Information

*Creator:* *Gustavo Sanchez Velasquez*
*Filled by:*
*Sent Date:*
*Sent Via:*
*Tracking #:*

2/1/2023

| Sets | Bottles/Set | Qty | Bottle Type Description | Preservative | Method | Matrix | Sample Type | Comments | Lot # |
|---|---|---|---|---|---|---|---|---|---|

## Notes to Field Staff:

Scan QR code for field sampler instructions

## Health and Safety Notes:

| Preservative | Comment |
|---|---|

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| Relinquished By | Company | Date | Time | Received By | Company | Seal #:<br>Seal #:<br>Seal #: |
|---|---|---|---|---|---|---|
| Relinquished By | Company | Date | Time | Received By | Company | Seal #:<br>Seal #:<br>Seal #: |

**Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.**

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

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.

Project Iteration ID: 1407003-342
Client Name: Eurofins Eaton Analytical
Project Name: PaloRojo Folder # Sub PO # Job # 1000014
COC Page Number: 4 of 4
Bottle Label Color: Light Blue

# Sample Receipt Summary

## Receiving Info

1. Initials Received By: AT
2. Date Received: 11/28/22
3. Time Received: 1430
4. Client Name: Eurofins
5. Courier Information: (Please circle)
   - (Client)
   - UPS
   - Area Fast
   - DRS
   - FedEx
   - GSO/GLS
   - Ontrac
   - PAMS
   - PHYSIS Driver:
     - i. Start Time:_____
     - ii. End Time:_____
     - iii. Total Mileage:_____
     - iv. Number of Pickups:_____
6. Container Information: (Please put the # of containers or circle none)
   - 1 Cooler
   - ___ Styrofoam Cooler
   - ___ Boxes
   - None
   - ___ Carboy(s)
   - ___ Carboy Trash Can(s)
   - ___ Carboy Cap(s)
   - Other _____
7. What type of ice was used: (Please circle any that apply)
   - (Wet Ice)
   - Blue Ice
   - Dry Ice
   - Water
   - None
8. Randomly Selected Samples Temperature (°C): 0.9 Used I/R Thermometer # 1-2

## Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

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

Notes:

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

# Chain of Custody Record

eurofins | Environment Testing

| Client Information | Sampler: EJ | Lab PM: Arada, Rachelle | Carrier Tracking No(s): | COC No: 380-9764-2757.3 |
|---|---|---|---|---|
| Client Contact: Dr. Ron Fenstemacher | Phone: | E-Mail: Rachelle.Arada@et.eurofinsus.com | State of Origin: | Page: Page 3 of 3 |
| Company: City & County of Honolulu | PWSID: | Analysis Requested | | Job #: |
| Address: 630 South Beretania Street Chemistry Lab | Due Date Requested: | | | Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other: |
| City: Honolulu | TAT Requested (days): | | | |
| State, Zip: HI, 96843 | Compliance Project: Δ Yes Δ No | | | |
| Phone: 808-748-5091(Tel) | PO #: C20525101 exp 05312023 | | | |
| Email: RFENSTEMACHER@hbws.org | WO #: | | | |
| Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill | Project #: 38001111 | | | |
| Site: Hawaii | SSOW#: | | | |

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs | SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) | SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil | 525.2_PREC - (MOD) 525plus Plus TICs | SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | R | R | RA | | RA | | |
| HALAWA WELLS UNITS 1&2 | | | | Water | | | | | | | | | |
| MOANALUA WELLS | 11/21/22 | 1025 | G | Water | | | X | X | X | X | | | |
| TB AIEA GULCH WELLS PUMP1 | | | | Water | | | | | | | | | |
| TB AIEA GULCH WELLS PUMP2 | | | | Water | | | | | | | | | |
| TB AIEA WELLS PUMPS 1&2 (260) | | | | Water | | | | | | | | | |
| TB HALAWA SHAFT | | | | Water | | | | | | | | | |
| TB HALAWA WELLS UNITS 1&2 | | | | Water | | | | | | | | | |
| TB MOANALUA WELLS | 11/21/22 | 1025 | | Water | | | | | | | X | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

380-29203 COC

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

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

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

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: FED EX : 7705 7027 1699 | |
|---|---|---|---|---|
| Relinquished by: [redacted] | Date/Time: 11/22/22 1200 | Company | Received by: G.RETTNER | Date/Time: 11/23/2022 10:00 Company: EEA |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: (751A) 4.3°-4.1° GEL-FROZEN |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-29203-1

**Login Number: 29203**
**List Number: 1**
**Creator: Elyas, Matthew**

**List Source: Eurofins Eaton Monrovia**

| Question | Answer | Comment |
|---|---|---|
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | 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 | |