# ANALYTICAL SUMMARY REPORT

March 11, 2022

AECOM - Honolulu
1001 Bishop Street, Suite 1600
Honolulu HI, 96813-3698

Work Order: B22010979 Quote ID: 5912

Project Name: CV18F0126, 60571032.02.46.01

Energy Laboratories Inc Billings MT received the following 5 samples from AECOM - Honolulu on 1/15/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Received Date | Matrix | Test |
|---|---|---|---|---|---|
| B22010979-001 | ERH2402 (OWDFMW07A) | 01/13/22 17:00 | 01/15/2022 | Ground Water | Metals Digestion by SW3010A<br>DRO-Liquid-Liquid Extraction SW3520C<br>Low Level PAH by 8270C SIM SW8270CSIM<br>Separatory Funnel SW3510C Liquid-Liquid Ext.<br>Carbon, Total Organic SW9060A<br>Metals by ICP-MS, Dissolved SW6020<br>Metals by ICP-MS, Total SW6020<br>8260-Volatile Organic Compounds-Short List SW8260B<br>EDB in Water by ECD SW8011<br>Gasoline Range Organics SW8015C<br>Diesel Range Organics SW8015C<br>Headspace Gas Analysis SW8015M<br>Semi-Volatile Organic Compounds, Extended List SW8270C<br>SW8011 Microextraction |
| B22010979-002 | ERH2401 (Trip Blank) 14653 | 01/13/22 17:00 | 01/15/2022 | Trip Blank | 8260-Volatile Organic Compounds-Short List SW8260B |
| B22010979-003 | ERH2401 (Trip Blank) 14653 | 01/13/22 17:00 | 01/15/2022 | Trip Blank | Gasoline Range Organics SW8015C |
| B22010979-004 | ERH2401 (Trip Blank) 14653 | 01/13/22 17:00 | 01/15/2022 | Trip Blank | EDB in Water by ECD SW8011<br>SW8011 Microextraction |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| B22010979-005 | ERH2401 (Trip Blank)<br>14663 | 01/13/22 17:00 | 01/15/2022 | Trip Blank | Headspace Gas Analysis<br>SW8015M |

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Quality Assurance Manager

Digitally signed by
Leigh Ann. Wise
Date: 2022.03.11 17:33:16 -07:00

**CLIENT:** AECOM - Honolulu
**Project:** CV18F0126, 60571032.02.46.01
**Work Order:** B22010979

**Revised Date:** 3/11/2022
**Report Date:** 2/28/2022

# CASE NARRATIVE

Revised Date: 3/11/2022:

On 3/1/2022 a request from Peggy Schuler was received by email to report 4-Chloro-3-methylphenol in place of 4-Chloro-2-methylphenol for sample ERH2402 (OWDFMW07A), (B22010979-001C). The report has been revised and replaces the previously issued report dated 2/28/2022 in its entirety.

General Comments:

For any question please contact your Project Manager at (406) 252-6325 or billingspm@energylab.com.

All analyses have been performed in accordance with DOD QSM Version 5.3 unless otherwise noted below. The specific methodologies used in obtaining the enclosed analytical results are indicated on the Analytical Summary Report and the Laboratory Analytical Report. The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted in the Work Order Receipt Checklist.

The tests listed below are accredited and meet the requirements of DoD QSM Version 5.3 as verified by ANSI-ASQ National Accreditation Board (ANAB) certificate number ADE-2588. Exceptions to this require client authorization and records documenting this approval are attached in the Sample Management Records. Accreditation may not be offered or required for all methods and analytes reported in this package. Refer to the certificate and scope of accreditation located at https://www.energylab.com/whyus/certifications-quality-control/ or contact your project manager.

Tests for Total Organic Carbon by SW9060A associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, PO Box 247, Casper, WY, EPA Number WY00002.

Project specific matrix quality control samples may not be reported if site specific samples were not submitted. Matrix quality control samples were performed on project samples where adequate volume was available. All quality control measures met criteria unless otherwise noted in the Analytical QC Exceptions report and in the Analysis Specific Comments below. Where available, sample management records are attached.

The Stage 4 Validation Package includes data reports for all analyses associated with the instrument calibration, quality control (QC) sample analysis, and sample analysis. All analytical data is within method specifications except as noted in the Analytical QC Exceptions report or the Analysis Specific Comments below. The analytical report identifies preparation batch and analytical run IDs associated with each result for a sample. Only the raw data associated with the parameters listed on this report should be validated.

Analysis Specific Comments:

An Analytical QC Exceptions Report has been attached, summarizing all qualified QC results. Where qualified, an analyte exceeded quality control limits, but was not detected in the associated sample(s).

# Chain of Custody & Analytical Request Record – DoD Project

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www.energylab.com

COC#202201-54NOI Page 1 of 1

**Account Information** *(Billing information)*

| | |
|---|---|
| Company/Name | AECOM |
| Contact | Alethea Ramos / Margie Pascua |
| Phone | 808-529-7283 / 808-356-5373 |
| Mailing Address | 1001 Bishop St., Suite 1600 |
| City, State, Zip | Honolulu, HI 96813 |
| Email | alethea.ramos@aecom com / margie pascua@aecom com |
| Receive Invoice | ☐Hard Copy ☑Email |
| Receive Report | ☐Hard Copy ☑Email |
| Purchase Order | N/A |
| Quote | N/A |
| Bottle Order | N/A |

**Report Information** *(if different than Account Information)*

| | |
|---|---|
| Company/Name | AECOM |
| Contact | see Account information |
| Phone | |
| Mailing Address | |
| City, State, Zip | |
| Email | USAPimaging@aecom com |
| Receive Report | ☐Hard Copy ☐Email |
| Special Report/Formats: | ☑LEVEL IV ☐NELAC ☑EDD/EDT *(contact laboratory)* ☐Other |

**Comments**

1 Project performed under DoD QSM
2 TPH-d/o needs 3520 extraction
3 Preliminary data (or level 1) in 1-2 business days, Level IV report in 10 working days.
4 Note NOI log is separate from other COC's.
5 *SVOC/VOC (full suite), PAH SIM (naphthalene, 1-methylnaphthalene, 2-methylnaphthalene)

**Project Information**

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | CV18F0126, 60571032.02.46.01 |
| Sampler Name | Colleen Smith |
| Sampler Phone | 815-988-0206 |
| Sample Origin State | Hawaii |
| EPA/State Compliance | ☐ Yes ☐ No |

The following tests will be subcontracted to other certified laboratories as shown! Signing this COC is authorization to subcontract the analyses as indicated!

| Analysis | Subcontract Lab |
|---|---|
| TOC | Energy Laboratories Inc., Casper |

**Matrix Codes**

A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

| Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | 8260 VOC's (Full Suite) + DCA* [40ml VOA w/HCL] | 8015 TPH-g [40ml VOA w/ HCL] | RSK175 Methane [40ml VOA w/H2SO4] | 8011 EDB [40ml VOA w/HCL] | SVOCs (full suite+Nap, 1-2-Methylnap) by 8270DSIM* | EPA 3630/8015 TPH-d/o +SGC [1-L AG w/H2SO4] | EPA 9060 TOC [250ml AG w/ H3PO4] | EPA 6020 Total Lead [250ml HDPE w/HNO3] | EPA 6020 Diss. Lead [250ml HDPE w/HNO3] (field Filtered) | See Attached | RUSH TAT | ELI LAB ID Laboratory Use Only |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 ERH2402 (OWDFMW07A) | 01/13/22 | 13:00 | 19 | GW | X | X | X | X | X | X | X | X | X | | ✓ | 822010979 |
| 2 ERH2401 (Trip Blank) | 01/13/22 | 12:10 | 8 | WQ | X | X | X | X | | | | | | | ✓ | |
| 3 | | | | | | | | | | | | | | | | |
| 4 TB-14653 (8260) | | | 2 | | | | | | | | | | | | | |
| 5 TB-14653 (6RO) DCA 1/19/22 | | | 1 | | | | | | | | | | | | | |
| 6 TB-14653 (8011) | | | 1 | | | | | | | | | | | | | |
| 7 TB-14663 (Methane) | | | 2 | | | | | | | | | | | | | |
| 8 TB-14576 | | | 2 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |

01/13/22

All turnaround times are standard unless marked as RUSH.

Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Custody Record MUST be signed | Relinquished by (print) CHRIS WOMACK | Date/Time 01/13/22 1800 | Signature | Received by (print) FEDEX | Date/Time 01/13/22 1800 | Signature | |
| | Relinquished by (print) | Date/Time | Signature | Received by Laboratory (print) Tracy Davis | Date/Time 1/15/22 1100 | Signature | |

**LABORATORY USE ONLY**

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp | Temp Blank | Ice | Payment Type | Amount | Receipt Number *(cash/check only)* |
|---|---|---|---|---|---|---|---|---|---|
| | | (Y) N C B | (Y) N | 3.4 °C | Y (N) | (Y) N | CC Cash Check | $ | |

ELI-COC-10/18 v.3

# Work Order Receipt Checklist

## AECOM - Honolulu

## B22010979

Login completed by: Tabitha Edwards
Date Received: 1/15/2022

Reviewed by: BL2000\gmccartney
Received by: kmt

Reviewed Date: 1/21/2022
Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☑ | No ☐ | Not Present ☐ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☐ | No ☑ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 3.4°C On Ice | | |
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

### Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

### Contact and Corrective Action Comments:

The collection time indicated on the Chain of Custody for all samples is in Hawaii-Aleutian Standard Time. The collection time has been converted (+4 Hours) to Mountain Standard Time.

# Qualifiers and Abbreviations

| Qualifier | Qualifier Description |
|---|---|
| ## | Limit of Quantitation (LOQ) for this analyte exceeds the Maximum Contaminant Level (MCL) |
| * | Result exceeds the Maximum Contaminant Level (MCL) |
| A | The analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated |
| B | Analyte detected in the method blank |
| C | Continuing calibration verification was outside of the quality control advisory limits |
| D | Limit of Quantitation (LOQ) increased due to sample matrix |
| E | Estimated value - result exceeds the instrument upper quantitation limit |
| H | Analysis performed past the method holding time |
| J | The reported result is an estimated value |
| L | Lowest Limit of Quantitation (LOQ) available for the analytical method used |
| N | Analyte concentration was not sufficiently high to calculate a Relative Percent Difference (RPD) for the serial dilution test |
| O | Diluted out |
| P | Poor method performance - method validations have shown no recoveries at low concentrations or method performance was erratic |
| Q | Values reported below the Limit of Quantitation (LOQ) are statistically invalid |
| R | Relative Percent Difference (RPD) exceeds advisory limit |
| S | Spike recovery outside of advisory limits |
| T | Analyte detected in the associated trip blank |
| U | Not detected at the Limit of Detection (LOD) |
| V | The RPD value for this duplicate represents the RER value and the RPDLimit of 2 is the RER upper limit. |

# Qualifiers and Abbreviations

## Abbreviation

| Reporting | Explanation of Abbreviation |
|---|---|
| DF | Dilution Factor |
| DL | Detection Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| MCL | Maximum Contaminant Level |
| MDC | Minimum Detectable Concentration |
| ND | Not detected at the Limit of Quantitaton (LOQ) |
| RBSL | Risk-Based Screening Levels |
| REC | Recovery |
| RER | Relative Error Ratio |
| RPD | Relative Percent Difference |
| SPK | Spike |

| Sample Types | Explanation of Abbreviation |
|---|---|
| CCB | Continuing Calibration Blank |
| CCV | Continuing Calibration Verification Standard |
| DUP | Sample Duplicate |
| ICSA | Interference Check Sample A |
| ICSAB | Interference Check Sample AB |
| ICV | Initial Calibration Verification Standard |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| LFB | Laboratory Fortified Blank |
| LRB | Laboratory Reagent Blank |
| MBLK | Method Blank |
| MS | Sample Matrix Spike |
| MSD | Sample Matrix Spike Duplicate |
| PDS | Post Digestion/Distillation Spike |
| QCS | Quality Control Sample |
| SD | Serial Dilution |
| SRM | Standard Reference Material |

# LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Lab ID:** B22010979-001
**Client:** AECOM - Honolulu
**Collection Date:** 01/13/2022 17:00
**Client Sample ID:** ERH2402 (OWDFMW07A)
**Date Received:** 01/15/2022
**Project:** CV18F0126, 60571032.02.46.01
**Report Date:** 02/28/2022
**Matrix:** Ground Water
**Revised Date:** 03/11/2022

| Analyses | Result | Units | DF | Qual | LOQ | LOD | DL | MCL | Method | Analysis Date / By | RunID : Run Order | BatchID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LOW LEVEL PAH BY 8270C SIM** | | | | | | | | | | | | |
| 1-Methylnaphthalene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.020 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| 2-Methylnaphthalene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.017 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Acenaphthene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.030 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Acenaphthylene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.024 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Anthracene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.027 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Benzo(a)anthracene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.026 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Benzo(a)pyrene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.033 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Benzo(b)fluoranthene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.022 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Benzo(g,h,i)perylene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.025 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Benzo(k)fluoranthene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.028 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Chrysene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.044 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Dibenzo(a,h)anthracene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.035 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Fluoranthene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.022 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Fluorene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.021 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Indeno(1,2,3-cd)pyrene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.047 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Naphthalene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.028 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Phenanthrene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.028 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| Pyrene | ND | ug/L | 1 | U | 0.10 | 0.048 | 0.023 | | SW8270CSIM | 01/25/2022 21:22/jph | SV5975.I_220125A : 19 | 162980 |
| **AGGREGATE ORGANICS** | | | | | | | | | | | | |
| Organic Carbon, Total (TOC)<br>- TOC Range is 0.4 to 0.4 | 0.37 | mg/L | 1 | J | 0.50 | 0.50 | 0.17 | | SW9060A | 01/18/2022 22:01/eli-ca | SUB-C278828 : 15 | C_R278828 |
| **METALS, DISSOLVED** | | | | | | | | | | | | |
| Lead | ND | mg/L | 1 | U | 0.001 | 0.0001 | 0.00006 | | SW6020 | 01/19/2022 09:06/car | ICPMS206-B_220118A : 152 | R373351 |
| **METALS, TOTAL** | | | | | | | | | | | | |
| Lead | ND | mg/L | 1 | U | 0.001 | 0.0001 | 0.00008 | | SW6020 | 01/19/2022 09:11/car | ICPMS206-B_220118A : 153 | 162992 |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | |
| Benzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.091 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Bromobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.083 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Bromochloromethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.14 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Bromodichloromethane | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.12 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Bromoform | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.12 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Carbon tetrachloride | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.14 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Chlorobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.091 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Chlorodibromomethane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.084 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Chloroethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.17 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Chloroform | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.079 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Chloromethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.16 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |

# LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Client Sample ID:** ERH2402 (OWDFMW07A)
**Project:** CV18F0126, 60571032.02.46.01
**Matrix:** Ground Water

**Lab ID:** B22010979-001
**Collection Date:** 01/13/2022 17:00
**Date Received:** 01/15/2022
**Report Date:** 02/28/2022
**Revised Date:** 03/11/2022

| Analyses | Result | Units | DF | Qual | LOQ | LOD | DL | MCL | Method | Analysis Date / By | RunID : Run Order | BatchID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | |
| 1,2-Dibromoethane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.092 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 2-Chlorotoluene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.088 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 4-Chlorotoluene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.073 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Dibromomethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.15 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,2-Dichlorobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.075 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,3-Dichlorobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.080 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,4-Dichlorobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.086 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Dichlorodifluoromethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.18 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,1-Dichloroethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.14 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,2-Dichloroethane | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.12 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,1-Dichloroethene | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.14 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| cis-1,2-Dichloroethene | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.11 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| trans-1,2-Dichloroethene | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.12 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,2-Dichloropropane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.085 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,3-Dichloropropane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.079 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 2,2-Dichloropropane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.19 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,1-Dichloropropene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.083 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| cis-1,3-Dichloropropene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.073 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| trans-1,3-Dichloropropene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.085 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Ethylbenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.084 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Methyl ethyl ketone | ND | ug/L | 1 | U | 20 | 5.0 | 1.8 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Methyl tert-butyl ether (MTBE) | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.10 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Methylene chloride | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.34 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Styrene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.067 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,1,1,2-Tetrachloroethane | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.10 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.087 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Tetrachloroethene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.067 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Toluene | ND | ug/L | 1 | UT | 1.0 | 0.20 | 0.068 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,1,1-Trichloroethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.13 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,1,2-Trichloroethane | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.11 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Trichloroethene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.099 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Trichlorofluoromethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.13 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| 1,2,3-Trichloropropane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.24 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Vinyl chloride | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.15 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| m+p-Xylenes | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.15 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| o-Xylene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.060 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Xylenes, Total | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.060 | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Surr: Dibromofluoromethane | 109.0 | %REC | 1 | | 80-119 | | | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Surr: 1,2-Dichloroethane-d4 | 109.0 | %REC | 1 | | 81-118 | | | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |

# LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Lab ID:** B22010979-001
**Client:** AECOM - Honolulu
**Collection Date:** 01/13/2022 17:00
**Client Sample ID:** ERH2402 (OWDFMW07A)
**Date Received:** 01/15/2022
**Project:** CV18F0126, 60571032.02.46.01
**Report Date:** 02/28/2022
**Matrix:** Ground Water
**Revised Date:** 03/11/2022

| Analyses | Result | Units | DF | Qual | LOQ | LOD | DL | MCL | Method | Analysis Date / By | RunID : Run Order | BatchID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | |
| Surr: Toluene-d8 | 107.0 | %REC | 1 | | 89-112 | | | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| Surr: p-Bromofluorobenzene | 106.0 | %REC | 1 | | 85-114 | | | | SW8260B | 01/20/2022 14:33/msc | VOA5975C.I_220120A : 8 | R373592 |
| **VOCS BY MICROEXTRACTION-ECD** | | | | | | | | | | | | |
| 1,2-Dibromoethane | ND | ug/L | 1 | U | 0.010 | 0.0049 | 0.0025 | | SW8011 | 01/19/2022 23:09/clt | GECD.I_220119B : 33 | 163023 |
| Surr: 1,1,1,2-Tetrachloroethane | 92.0 | %REC | 1 | | 70-130 | | | | SW8011 | 01/19/2022 23:09/clt | GECD.I_220119B : 33 | 163023 |
| **PETROLEUM HYDROCARBONS-VOLATILE** | | | | | | | | | | | | |
| C6 to C10 | ND | ug/L | 1 | U | 20 | 8.7 | 2.3 | | SW8015C | 01/18/2022 07:33/jp | PE 1_220117A : 28 | R373334 |
| Total Purgeable Hydrocarbons | ND | ug/L | 1 | U | 20 | 10 | 3.6 | | SW8015C | 01/18/2022 07:33/jp | PE 1_220117A : 28 | R373334 |
| Surr: Trifluorotoluene | 82.0 | %REC | 1 | | 70-130 | | | | SW8015C | 01/18/2022 07:33/jp | PE 1_220117A : 28 | R373334 |
| - Note 1: C6 to C10 is defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene. | | | | | | | | | | | | |
| - Note 2: Total Purgeable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time. | | | | | | | | | | | | |
| **PETROLEUM HYDROCARBONS-SEMI-VOLATILE** | | | | | | | | | | | | |
| Diesel Range Organics (C10 to C24) | ND | mg/L | 1 | U | 0.30 | 0.14 | 0.034 | | SW8015C | 01/19/2022 09:58/amn | GCFID-HP4-B_220118A : 14 | 162993 |
| Oil Range Hydrocarbons (C24 to C40) | ND | mg/L | 1 | U | 0.30 | 0.14 | 0.049 | | SW8015C | 01/19/2022 09:58/amn | GCFID-HP4-B_220118A : 14 | 162993 |
| Total Extractable Hydrocarbons | ND | mg/L | 1 | U | 0.30 | 0.14 | 0.075 | | SW8015C | 01/19/2022 09:58/amn | GCFID-HP4-B_220118A : 14 | 162993 |
| Surr: o-Terphenyl | 101.0 | %REC | 1 | | 56-125 | | | | SW8015C | 01/19/2022 09:58/amn | GCFID-HP4-B_220118A : 14 | 162993 |
| Surr: n-Triacontane | 120.0 | %REC | 1 | | 50-150 | | | | SW8015C | 01/19/2022 09:58/amn | GCFID-HP4-B_220118A : 14 | 162993 |
| - Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time. | | | | | | | | | | | | |
| - Since there were no detectable hydrocarbons, Silica Gel Treatment (SGT) results are equivalent to non-SGT results. | | | | | | | | | | | | |
| **ORGANIC CHARACTERISTICS** | | | | | | | | | | | | |
| Methane | ND | mg/L | 1 | U | 0.0020 | 0.0012 | 0.00070 | | SW8015M | 01/18/2022 11:49/jdw | FID-HEADSPACE_220118A : 22 | R373380 |
| **SEMI-VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | ug/L | 1 | U | 10 | 4.8 | 1.8 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 1,2-Dichlorobenzene | ND | ug/L | 1 | U | 10 | 4.8 | 1.9 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 1,3-Dichlorobenzene | ND | ug/L | 1 | U | 10 | 4.8 | 2.0 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 1,4-Dichlorobenzene | ND | ug/L | 1 | U | 10 | 4.8 | 1.9 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2,4,5-Trichlorophenol | ND | ug/L | 1 | U | 10 | 4.8 | 2.1 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2,4,6-Trichlorophenol | ND | ug/L | 1 | U | 10 | 4.8 | 2.5 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2,4-Dichlorophenol | ND | ug/L | 1 | U | 10 | 4.8 | 1.6 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2,4-Dimethylphenol | ND | ug/L | 1 | U | 10 | 4.8 | 1.6 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2,4-Dinitrophenol | ND | ug/L | 1 | U | 10 | 9.5 | 4.1 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2,4-Dinitrotoluene | ND | ug/L | 1 | U | 10 | 4.8 | 2.9 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2,6-Dinitrotoluene | ND | ug/L | 1 | U | 10 | 4.8 | 3.0 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2-Chloronaphthalene | ND | ug/L | 1 | U | 10 | 4.8 | 2.0 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2-Chlorophenol | ND | ug/L | 1 | U | 10 | 4.8 | 2.4 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 2-Nitrophenol | ND | ug/L | 1 | U | 10 | 4.8 | 2.2 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 3,3´-Dichlorobenzidine | ND | ug/L | 1 | U | 10 | 4.8 | 2.0 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 4,6-Dinitro-2-methylphenol | ND | ug/L | 1 | U | 10 | 9.5 | 2.2 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |

# LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Lab ID:** B22010979-001
**Client:** AECOM - Honolulu
**Collection Date:** 01/13/2022 17:00
**Client Sample ID:** ERH2402 (OWDFMW07A)
**Date Received:** 01/15/2022
**Project:** CV18F0126, 60571032.02.46.01
**Report Date:** 02/28/2022
**Matrix:** Ground Water
**Revised Date:** 03/11/2022

| Analyses | Result | Units | DF | Qual | LOQ | LOD | DL | MCL | Method | Analysis Date / By | RunID : Run Order | BatchID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEMI-VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | ND | ug/L | 1 | U | 10 | 4.8 | 1.7 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 4-Chloro-3-methylphenol | ND | ug/L | 1 | U | 10 | 4.8 | 1.4 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 4-Chlorophenol | ND | ug/L | 1 | U | 10 | 4.8 | 2.5 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 4-Chlorophenyl phenyl ether | ND | ug/L | 1 | U | 10 | 4.8 | 1.9 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| 4-Nitrophenol | ND | ug/L | 1 | U | 10 | 9.5 | 2.4 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Azobenzene | ND | ug/L | 1 | U | 10 | 4.8 | 1.0 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| bis(-2-chloroethoxy)Methane | ND | ug/L | 1 | U | 10 | 4.8 | 1.3 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| bis(-2-chloroethyl)Ether | ND | ug/L | 1 | U | 10 | 4.8 | 2.4 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| bis(2-chloroisopropyl)Ether | ND | ug/L | 1 | U | 10 | 4.8 | 1.4 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| bis(2-ethylhexyl)Phthalate | ND | ug/L | 1 | U | 10 | 4.8 | 1.8 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Butylbenzylphthalate | ND | ug/L | 1 | U | 10 | 4.8 | 1.5 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Di-n-butyl phthalate | ND | ug/L | 1 | U | 10 | 4.8 | 0.89 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Di-n-octyl phthalate | ND | ug/L | 1 | U | 10 | 4.8 | 1.3 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Diethyl phthalate | ND | ug/L | 1 | U | 10 | 4.8 | 2.1 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Dimethyl phthalate | ND | ug/L | 1 | U | 10 | 4.8 | 1.6 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Hexachlorobenzene | ND | ug/L | 1 | U | 10 | 4.8 | 1.3 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Hexachlorobutadiene | ND | ug/L | 1 | U | 10 | 4.8 | 2.2 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Hexachlorocyclopentadiene | ND | ug/L | 1 | U | 10 | 4.8 | 2.8 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Hexachloroethane | ND | ug/L | 1 | U | 10 | 4.8 | 1.7 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Isophorone | ND | ug/L | 1 | U | 10 | 4.8 | 1.6 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| m+p-Cresols | ND | ug/L | 1 | U | 10 | 4.8 | 1.7 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| n-Nitroso-di-n-propylamine | ND | ug/L | 1 | U | 10 | 4.8 | 1.5 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| n-Nitrosodimethylamine | ND | ug/L | 1 | U | 10 | 4.8 | 1.5 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| n-Nitrosodiphenylamine | ND | ug/L | 1 | U | 10 | 4.8 | 1.1 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Nitrobenzene | ND | ug/L | 1 | U | 10 | 4.8 | 2.2 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| o-Cresol | ND | ug/L | 1 | U | 10 | 4.8 | 1.7 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Pentachlorophenol | ND | ug/L | 1 | U | 10 | 9.5 | 4.0 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Phenol | ND | ug/L | 1 | U | 10 | 4.8 | 1.4 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Pyridine | ND | ug/L | 1 | U | 10 | 4.8 | 3.1 | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Surr: 2,4,6-Tribromophenol | 85.0 | %REC | 1 | | 43-140 | | | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Surr: 2-Fluorobiphenyl | 55.0 | %REC | 1 | | 44-119 | | | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Surr: 2-Fluorophenol | 52.0 | %REC | 1 | | 19-119 | | | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Surr: Nitrobenzene-d5 | 69.0 | %REC | 1 | | 44-120 | | | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Surr: Phenol-d5 | 41.0 | %REC | 1 | | 10-65 | | | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |
| Surr: Terphenyl-d14 | 94.0 | %REC | 1 | | 50-134 | | | | SW8270C | 01/29/2022 16:04/dsm | SV5973N.I_220128C : 18 | 162980 |

# LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Client Sample ID:** ERH2401 (Trip Blank) 14653
**Project:** CV18F0126, 60571032.02.46.01
**Matrix:** Trip Blank

**Lab ID:** B22010979-002
**Collection Date:** 01/13/2022 17:00
**Date Received:** 01/15/2022
**Report Date:** 02/28/2022
**Revised Date:** 03/11/2022

| Analyses | Result | Units | DF | Qual | LOQ | LOD | DL | MCL | Method | Analysis Date / By | RunID : Run Order | BatchID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | |
| Benzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.091 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Bromobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.083 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Bromochloromethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.14 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Bromodichloromethane | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.12 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Bromoform | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.12 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Carbon tetrachloride | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.14 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Chlorobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.091 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Chlorodibromomethane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.084 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Chloroethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.17 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Chloroform | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.079 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Chloromethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.16 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,2-Dibromoethane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.092 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 2-Chlorotoluene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.088 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 4-Chlorotoluene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.073 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Dibromomethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.15 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,2-Dichlorobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.075 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,3-Dichlorobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.080 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,4-Dichlorobenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.086 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Dichlorodifluoromethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.18 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,1-Dichloroethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.14 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,2-Dichloroethane | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.12 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,1-Dichloroethene | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.14 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| cis-1,2-Dichloroethene | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.11 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| trans-1,2-Dichloroethene | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.12 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,2-Dichloropropane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.085 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,3-Dichloropropane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.079 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 2,2-Dichloropropane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.19 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,1-Dichloropropene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.083 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| cis-1,3-Dichloropropene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.073 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| trans-1,3-Dichloropropene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.085 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Ethylbenzene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.084 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Methyl ethyl ketone | ND | ug/L | 1 | U | 20 | 5.0 | 1.8 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Methyl tert-butyl ether (MTBE) | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.10 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Methylene chloride | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.34 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Styrene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.067 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,1,1,2-Tetrachloroethane | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.10 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.087 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Tetrachloroethene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.067 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Toluene | 0.095 | ug/L | 1 | J | 1.0 | 0.20 | 0.068 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |

# LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Lab ID:** B22010979-002
**Client:** AECOM - Honolulu
**Collection Date:** 01/13/2022 17:00
**Client Sample ID:** ERH2401 (Trip Blank) 14653
**Date Received:** 01/15/2022
**Project:** CV18F0126, 60571032.02.46.01
**Report Date:** 02/28/2022
**Matrix:** Trip Blank
**Revised Date:** 03/11/2022

| Analyses | Result | Units | DF | Qual | LOQ | LOD | DL | MCL | Method | Analysis Date / By | RunID : Run Order | BatchID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.13 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,1,2-Trichloroethane | ND | ug/L | 1 | U | 1.0 | 0.25 | 0.11 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Trichloroethene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.099 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Trichlorofluoromethane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.13 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| 1,2,3-Trichloropropane | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.24 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Vinyl chloride | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.15 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| m+p-Xylenes | ND | ug/L | 1 | U | 1.0 | 0.50 | 0.15 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| o-Xylene | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.060 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Xylenes, Total | ND | ug/L | 1 | U | 1.0 | 0.20 | 0.060 | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Surr: Dibromofluoromethane | 110.0 | %REC | 1 | | 80-119 | | | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Surr: 1,2-Dichloroethane-d4 | 111.0 | %REC | 1 | | 81-118 | | | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Surr: Toluene-d8 | 104.0 | %REC | 1 | | 89-112 | | | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |
| Surr: p-Bromofluorobenzene | 102.0 | %REC | 1 | | 85-114 | | | | SW8260B | 01/20/2022 18:12/msc | VOA5975C.I_220120A : 16 | R373592 |

# LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Lab ID:** B22010979-003
**Client:** AECOM - Honolulu
**Collection Date:** 01/13/2022 17:00
**Client Sample ID:** ERH2401 (Trip Blank) 14653
**Date Received:** 01/15/2022
**Project:** CV18F0126, 60571032.02.46.01
**Report Date:** 02/28/2022
**Matrix:** Trip Blank
**Revised Date:** 03/11/2022

| Analyses | Result | Units | DF | Qual | LOQ | LOD | DL | MCL | Method | Analysis Date / By | RunID : Run Order | BatchID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PETROLEUM HYDROCARBONS-VOLATILE** | | | | | | | | | | | | |
| C6 to C10 | ND | ug/L | 1 | U | 20 | 8.7 | 2.3 | | SW8015C | 01/17/2022 18:59/jp | PE 1_220117A : 14 | R373334 |
| Total Purgeable Hydrocarbons | ND | ug/L | 1 | U | 20 | 10 | 3.6 | | SW8015C | 01/17/2022 18:59/jp | PE 1_220117A : 14 | R373334 |
| Surr: Trifluorotoluene | 77.0 | %REC | 1 | | 70-130 | | | | SW8015C | 01/17/2022 18:59/jp | PE 1_220117A : 14 | R373334 |

- Note 1: C6 to C10 is defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.
- Note 2: Total Purgeable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.

# LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Lab ID:** B22010979-004
**Client:** AECOM - Honolulu
**Collection Date:** 01/13/2022 17:00
**Client Sample ID:** ERH2401 (Trip Blank) 14653
**Date Received:** 01/15/2022
**Project:** CV18F0126, 60571032.02.46.01
**Report Date:** 02/28/2022
**Matrix:** Trip Blank
**Revised Date:** 03/11/2022

| Analyses | Result | Units | DF | Qual | LOQ | LOD | DL | MCL | Method | Analysis Date / By | RunID : Run Order | BatchID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **VOCS BY MICROEXTRACTION-ECD** | | | | | | | | | | | | |
| 1,2-Dibromoethane | ND | ug/L | 1 | U | 0.010 | 0.0050 | 0.0026 | | SW8011 | 01/19/2022 23:28/clt | GECD.I_220119B : 34 | 163023 |
| Surr: 1,1,1,2-Tetrachloroethane | 88.0 | %REC | 1 | | 70-130 | | | | SW8011 | 01/19/2022 23:28/clt | GECD.I_220119B : 34 | 163023 |

# LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Lab ID:** B22010979-005
**Client:** AECOM - Honolulu
**Collection Date:** 01/13/2022 17:00
**Client Sample ID:** ERH2401 (Trip Blank) 14663
**Date Received:** 01/15/2022
**Project:** CV18F0126, 60571032.02.46.01
**Report Date:** 02/28/2022
**Matrix:** Trip Blank
**Revised Date:** 03/11/2022

| Analyses | Result | Units | DF | Qual | LOQ | LOD | DL | MCL | Method | Analysis Date / By | RunID : Run Order | BatchID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ORGANIC CHARACTERISTICS** | | | | | | | | | | | | |
| Methane | ND | mg/L | 1 | U | 0.0020 | 0.0012 | 0.00070 | | SW8015M | 01/18/2022 11:55/jdw | FID-HEADSPACE_220118A : 23 | R373380 |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5975.I_220125A: 7 **SampType:** Method Blank **Batch ID:** 162980
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 14:51 **Prep Date:** 01/17/2022 10:29
**Lab ID:** MB-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | ND | 0.10 | | | | | | | | | |
| 2-Methylnaphthalene | ND | 0.10 | | | | | | | | | |
| Acenaphthene | ND | 0.10 | | | | | | | | | |
| Acenaphthylene | ND | 0.10 | | | | | | | | | |
| Anthracene | ND | 0.10 | | | | | | | | | |
| Benzo(a)anthracene | ND | 0.10 | | | | | | | | | |
| Benzo(a)pyrene | ND | 0.10 | | | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.10 | | | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.10 | | | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.10 | | | | | | | | | |
| Chrysene | ND | 0.10 | | | | | | | | | |
| Dibenzo(a,h)anthracene | ND | 0.10 | | | | | | | | | |
| Fluoranthene | ND | 0.10 | | | | | | | | | |
| Fluorene | ND | 0.10 | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | ND | 0.10 | | | | | | | | | |
| Naphthalene | ND | 0.10 | | | | | | | | | |
| Phenanthrene | ND | 0.10 | | | | | | | | | |
| Pyrene | ND | 0.10 | | | | | | | | | |

Associated Samples: **B22010979-001C**

**Run ID: Run Order:** SV5975.I_220125A: 8 **SampType:** Laboratory Control Sample **Batch ID:** 162980
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 15:24 **Prep Date:** 01/17/2022 10:30
**Lab ID:** LLCS-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 3.3 | 0.10 | 5.0 | | 66.0 | 41 | 115 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5975.I_220125A: 8 **SampType:** Laboratory Control Sample **Batch ID:** 162980
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 15:24 **Prep Date:** 01/17/2022 10:30
**Lab ID:** LLCS-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | 4.0 | 0.10 | 5.0 | | 79.0 | 39 | 114 | | | | |
| Acenaphthene | 3.7 | 0.10 | 5.0 | | 73.0 | 48 | 114 | | | | |
| Acenaphthylene | 3.5 | 0.10 | 5.0 | | 70.0 | 35 | 121 | | | | |
| Anthracene | 4.7 | 0.10 | 5.0 | | 94.0 | 53 | 119 | | | | |
| Benzo(a)anthracene | 5.0 | 0.10 | 5.0 | | 99.0 | 59 | 120 | | | | |
| Benzo(a)pyrene | 4.8 | 0.10 | 5.0 | | 96.0 | 53 | 120 | | | | |
| Benzo(b)fluoranthene | 4.7 | 0.10 | 5.0 | | 93.0 | 53 | 126 | | | | |
| Benzo(g,h,i)perylene | 5.3 | 0.10 | 5.0 | | 106.0 | 44 | 128 | | | | |
| Benzo(k)fluoranthene | 4.4 | 0.10 | 5.0 | | 87.0 | 54 | 125 | | | | |
| Chrysene | 4.5 | 0.10 | 5.0 | | 90.0 | 57 | 120 | | | | |
| Dibenzo(a,h)anthracene | 5.2 | 0.10 | 5.0 | | 105.0 | 44 | 141 | | | | |
| Fluoranthene | 4.4 | 0.10 | 5.0 | | 87.0 | 58 | 120 | | | | |
| Fluorene | 4.0 | 0.10 | 5.0 | | 80.0 | 50 | 118 | | | | |
| Indeno(1,2,3-cd)pyrene | 5.2 | 0.10 | 5.0 | | 104.0 | 48 | 130 | | | | |
| Naphthalene | 3.8 | 0.10 | 5.0 | | 77.0 | 43 | 114 | | | | |
| Phenanthrene | 4.6 | 0.10 | 5.0 | | 92.0 | 53 | 115 | | | | |
| Pyrene | 4.5 | 0.10 | 5.0 | | 91.0 | 53 | 121 | | | | |

Associated Samples: **B22010979-001C**

**Run ID: Run Order:** SV5975.I_220125A: 9 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 162980
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 15:56 **Prep Date:** 01/17/2022 10:30
**Lab ID:** LLCSD-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 2.6 | 0.10 | 5.0 | | 53.0 | 41 | 115 | 3.3 | 22.0 | 40.0 | |
| 2-Methylnaphthalene | 2.8 | 0.10 | 5.0 | | 57.0 | 39 | 114 | 4.0 | 33.0 | 40.0 | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5975.I_220125A: 9 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 162980
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 15:56 **Prep Date:** 01/17/2022 10:30
**Lab ID:** LLCSD-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 3.1 | 0.10 | 5.0 | | 62.0 | 48 | 114 | 3.7 | 16.0 | 40.0 | |
| Acenaphthylene | 3.1 | 0.10 | 5.0 | | 61.0 | 35 | 121 | 3.5 | 14.0 | 40.0 | |
| Anthracene | 4.3 | 0.10 | 5.0 | | 85.0 | 53 | 119 | 4.7 | 10.0 | 40.0 | |
| Benzo(a)anthracene | 5.0 | 0.10 | 5.0 | | 101.0 | 59 | 120 | 5.0 | 1.5 | 40.0 | |
| Benzo(a)pyrene | 4.8 | 0.10 | 5.0 | | 97.0 | 53 | 120 | 4.8 | 1.3 | 40.0 | |
| Benzo(b)fluoranthene | 5.0 | 0.10 | 5.0 | | 100.0 | 53 | 126 | 4.7 | 6.9 | 40.0 | |
| Benzo(g,h,i)perylene | 5.4 | 0.10 | 5.0 | | 108.0 | 44 | 128 | 5.3 | 1.2 | 40.0 | |
| Benzo(k)fluoranthene | 4.7 | 0.10 | 5.0 | | 93.0 | 54 | 125 | 4.4 | 6.7 | 40.0 | |
| Chrysene | 4.7 | 0.10 | 5.0 | | 94.0 | 57 | 120 | 4.5 | 4.0 | 40.0 | |
| Dibenzo(a,h)anthracene | 5.3 | 0.10 | 5.0 | | 106.0 | 44 | 141 | 5.2 | 1.5 | 40.0 | |
| Fluoranthene | 4.4 | 0.10 | 5.0 | | 89.0 | 58 | 120 | 4.4 | 1.3 | 40.0 | |
| Fluorene | 3.7 | 0.10 | 5.0 | | 74.0 | 50 | 118 | 4.0 | 8.1 | 40.0 | |
| Indeno(1,2,3-cd)pyrene | 5.2 | 0.10 | 5.0 | | 105.0 | 48 | 130 | 5.2 | 0.4 | 40.0 | |
| Naphthalene | 3.0 | 0.10 | 5.0 | | 60.0 | 43 | 114 | 3.8 | 24.0 | 40.0 | |
| Phenanthrene | 4.1 | 0.10 | 5.0 | | 82.0 | 53 | 115 | 4.6 | 12.0 | 40.0 | |
| Pyrene | 4.6 | 0.10 | 5.0 | | 92.0 | 53 | 121 | 4.5 | 1.1 | 40.0 | |

Associated Samples: **B22010979-001C**

- Insufficient sample was submitted to perform a Matrix Spike/Duplicate, so a Laboratory Control Sample Duplicate is included in the reporting package to assess precision.

**Run ID: Run Order:** SV5975.I_220125A: 12 **SampType:** Sample Matrix Spike **Batch ID:** 162980
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 17:34 **Prep Date:** 01/17/2022 10:34
**Lab ID:** B22010972-001CLMS **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 2.8 | 0.10 | 4.9 | 0.0 | 58.0 | 41 | 115 | | | | |
| 2-Methylnaphthalene | 3.4 | 0.10 | 4.9 | 0.0 | 69.0 | 39 | 114 | | | | |
| Acenaphthene | 3.1 | 0.10 | 4.9 | 0.0 | 63.0 | 48 | 114 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5975.I_220125A: 12 **SampType:** Sample Matrix Spike **Batch ID:** 162980
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 17:34 **Prep Date:** 01/17/2022 10:34
**Lab ID:** B22010972-001CLMS **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | 2.9 | 0.10 | 4.9 | 0.0 | 59.0 | 35 | 121 | | | | |
| Anthracene | 4.3 | 0.10 | 4.9 | 0.0 | 89.0 | 53 | 119 | | | | |
| Benzo(a)anthracene | 4.1 | 0.10 | 4.9 | 0.0 | 84.0 | 59 | 120 | | | | |
| Benzo(a)pyrene | 3.5 | 0.10 | 4.9 | 0.0 | 72.0 | 53 | 120 | | | | |
| Benzo(b)fluoranthene | 3.6 | 0.10 | 4.9 | 0.0 | 75.0 | 53 | 126 | | | | |
| Benzo(g,h,i)perylene | 3.9 | 0.10 | 4.9 | 0.0 | 80.0 | 44 | 128 | | | | |
| Benzo(k)fluoranthene | 3.4 | 0.10 | 4.9 | 0.0 | 71.0 | 54 | 125 | | | | |
| Chrysene | 3.8 | 0.10 | 4.9 | 0.0 | 78.0 | 57 | 120 | | | | |
| Dibenzo(a,h)anthracene | 3.7 | 0.10 | 4.9 | 0.0 | 77.0 | 44 | 141 | | | | |
| Fluoranthene | 3.9 | 0.10 | 4.9 | 0.0 | 79.0 | 58 | 120 | | | | |
| Fluorene | 3.5 | 0.10 | 4.9 | 0.0 | 73.0 | 50 | 118 | | | | |
| Indeno(1,2,3-cd)pyrene | 3.4 | 0.10 | 4.9 | 0.0 | 71.0 | 48 | 130 | | | | |
| Naphthalene | 3.2 | 0.10 | 4.9 | 0.0 | 66.0 | 43 | 114 | | | | |
| Phenanthrene | 4.2 | 0.10 | 4.9 | 0.0 | 87.0 | 53 | 115 | | | | |
| Pyrene | 3.8 | 0.10 | 4.9 | 0.0 | 79.0 | 53 | 121 | | | | |

Associated Samples: **B22010979-001C**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5975.I_220125A: 21 **SampType:** Sample Matrix Spike **Batch ID:** 162980
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 22:27 **Prep Date:** 01/18/2022 12:22
**Lab ID:** B22010980-001CLMS **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 2.3 | 0.10 | 4.8 | 0.0 | 49.0 | 41 | 115 | | | | |
| 2-Methylnaphthalene | 2.8 | 0.10 | 4.8 | 0.0 | 58.0 | 39 | 114 | | | | |
| Acenaphthene | 3.0 | 0.10 | 4.8 | 0.0 | 63.0 | 48 | 114 | | | | |
| Acenaphthylene | 2.8 | 0.10 | 4.8 | 0.0 | 59.0 | 35 | 121 | | | | |
| Anthracene | 4.3 | 0.10 | 4.8 | 0.0 | 89.0 | 53 | 119 | | | | |
| Benzo(a)anthracene | 4.7 | 0.10 | 4.8 | 0.0 | 99.0 | 59 | 120 | | | | |
| Benzo(a)pyrene | 4.1 | 0.10 | 4.8 | 0.0 | 86.0 | 53 | 120 | | | | |
| Benzo(b)fluoranthene | 4.1 | 0.10 | 4.8 | 0.0 | 87.0 | 53 | 126 | | | | |
| Benzo(g,h,i)perylene | 4.7 | 0.10 | 4.8 | 0.0 | 98.0 | 44 | 128 | | | | |
| Benzo(k)fluoranthene | 3.9 | 0.10 | 4.8 | 0.0 | 81.0 | 54 | 125 | | | | |
| Chrysene | 4.2 | 0.10 | 4.8 | 0.0 | 88.0 | 57 | 120 | | | | |
| Dibenzo(a,h)anthracene | 4.7 | 0.10 | 4.8 | 0.0 | 99.0 | 44 | 141 | | | | |
| Fluoranthene | 4.1 | 0.10 | 4.8 | 0.0 | 86.0 | 58 | 120 | | | | |
| Fluorene | 3.5 | 0.10 | 4.8 | 0.0 | 73.0 | 50 | 118 | | | | |
| Indeno(1,2,3-cd)pyrene | 4.4 | 0.10 | 4.8 | 0.0 | 92.0 | 48 | 130 | | | | |
| Naphthalene | 2.6 | 0.10 | 4.8 | 0.0 | 55.0 | 43 | 114 | | | | |
| Phenanthrene | 4.2 | 0.10 | 4.8 | 0.0 | 89.0 | 53 | 115 | | | | |
| Pyrene | 4.2 | 0.10 | 4.8 | 0.0 | 88.0 | 53 | 121 | | | | |

Associated Samples: **B22010979-001C**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5975.I_220125A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373709
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 11:03 **Prep Date:**
**Lab ID:** 25-Jan-22_CCV_2 **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 1.8 | 0.10 | 2.0 | | 91.0 | 80 | 120 | | | | |
| 2-Methylnaphthalene | 1.9 | 0.10 | 2.0 | | 93.0 | 80 | 120 | | | | |
| Acenaphthene | 1.6 | 0.10 | 2.0 | | 80.0 | 80 | 120 | | | | |
| Acenaphthylene | 1.8 | 0.10 | 2.0 | | 90.0 | 80 | 120 | | | | |
| Anthracene | 2.0 | 0.10 | 2.0 | | 102.0 | 80 | 120 | | | | |
| Benzo(a)anthracene | 2.2 | 0.10 | 2.0 | | 108.0 | 80 | 120 | | | | |
| Benzo(a)pyrene | 2.2 | 0.10 | 2.0 | | 111.0 | 80 | 120 | | | | |
| Benzo(b)fluoranthene | 1.8 | 0.10 | 2.0 | | 90.0 | 80 | 120 | | | | |
| Benzo(g,h,i)perylene | 2.1 | 0.10 | 2.0 | | 105.0 | 80 | 120 | | | | |
| Benzo(k)fluoranthene | 1.9 | 0.10 | 2.0 | | 96.0 | 80 | 120 | | | | |
| Chrysene | 1.8 | 0.10 | 2.0 | | 91.0 | 80 | 120 | | | | |
| Dibenzo(a,h)anthracene | 2.0 | 0.10 | 2.0 | | 101.0 | 80 | 120 | | | | |
| Fluoranthene | 1.8 | 0.10 | 2.0 | | 89.0 | 80 | 120 | | | | |
| Fluorene | 1.9 | 0.10 | 2.0 | | 93.0 | 80 | 120 | | | | |
| Indeno(1,2,3-cd)pyrene | 2.1 | 0.10 | 2.0 | | 107.0 | 80 | 120 | | | | |
| Naphthalene | 1.8 | 0.10 | 2.0 | | 90.0 | 80 | 120 | | | | |
| Phenanthrene | 1.9 | 0.10 | 2.0 | | 97.0 | 80 | 120 | | | | |
| Pyrene | 2.0 | 0.10 | 2.0 | | 98.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001C**

**Run ID: Run Order:** SV5975.I_220125A: 22 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373709
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 23:00 **Prep Date:**
**Lab ID:** 25-Jan-22_CCV_24 **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 1.7 | 0.10 | 2.0 | | 86.0 | 50 | 150 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5975.I_220125A: 22 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373709
**Method:** SW8270CSIM **Analysis Date:** 01/25/2022 23:00 **Prep Date:**
**Lab ID:** 25-Jan-22_CCV_24 **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | 1.9 | 0.10 | 2.0 | | 97.0 | 50 | 150 | | | | |
| Acenaphthene | 1.7 | 0.10 | 2.0 | | 85.0 | 50 | 150 | | | | |
| Acenaphthylene | 1.4 | 0.10 | 2.0 | | 68.0 | 50 | 150 | | | | |
| Anthracene | 2.0 | 0.10 | 2.0 | | 98.0 | 50 | 150 | | | | |
| Benzo(a)anthracene | 2.0 | 0.10 | 2.0 | | 99.0 | 50 | 150 | | | | |
| Benzo(a)pyrene | 2.0 | 0.10 | 2.0 | | 101.0 | 50 | 150 | | | | |
| Benzo(b)fluoranthene | 1.8 | 0.10 | 2.0 | | 92.0 | 50 | 150 | | | | |
| Benzo(g,h,i)perylene | 2.2 | 0.10 | 2.0 | | 109.0 | 50 | 150 | | | | |
| Benzo(k)fluoranthene | 1.9 | 0.10 | 2.0 | | 95.0 | 50 | 150 | | | | |
| Chrysene | 1.8 | 0.10 | 2.0 | | 90.0 | 50 | 150 | | | | |
| Dibenzo(a,h)anthracene | 2.0 | 0.10 | 2.0 | | 99.0 | 50 | 150 | | | | |
| Fluoranthene | 1.8 | 0.10 | 2.0 | | 89.0 | 50 | 150 | | | | |
| Fluorene | 1.8 | 0.10 | 2.0 | | 91.0 | 50 | 150 | | | | |
| Indeno(1,2,3-cd)pyrene | 2.1 | 0.10 | 2.0 | | 105.0 | 50 | 150 | | | | |
| Naphthalene | 1.9 | 0.10 | 2.0 | | 97.0 | 50 | 150 | | | | |
| Phenanthrene | 2.0 | 0.10 | 2.0 | | 100.0 | 50 | 150 | | | | |
| Pyrene | 1.9 | 0.10 | 2.0 | | 94.0 | 50 | 150 | | | | |

Associated Samples: **B22010979-001C**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SUB-C278828: 2 **SampType:** Method Blank **Batch ID:** C_R278828
**Method:** SW9060A **Analysis Date:** 01/18/2022 13:51 **Prep Date:**
**Lab ID:** MBLK **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total (TOC) | ND | 0.20 | | | | | | | | | |

Associated Samples: **B22010979-001E**
- TOC Range is 0.0 to 0.2

**Run ID: Run Order:** SUB-C278828: 1 **SampType:** Laboratory Control Sample **Batch ID:** C_R278828
**Method:** SW9060A **Analysis Date:** 01/18/2022 13:11 **Prep Date:**
**Lab ID:** LCS **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total (TOC) | 5.2 | 0.50 | 5.0 | | 104.0 | 91 | 111 | | | | |

Associated Samples: **B22010979-001E**
- TOC Range is 5.0 to 5.3

**Run ID: Run Order:** SUB-C278828: 5 **SampType:** Sample Matrix Spike **Batch ID:** C_R278828
**Method:** SW9060A **Analysis Date:** 01/18/2022 15:51 **Prep Date:**
**Lab ID:** C22010504-001EMS **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total (TOC) | 5.6 | 0.50 | 5.0 | 0.39 | 105.0 | 91 | 111 | | | | |

Associated Samples: **B22010979-001E**
- TOC Range is 5.6 to 5.7

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SUB-C278828: 6 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** C_R278828
**Method:** SW9060A **Analysis Date:** 01/18/2022 16:33 **Prep Date:**
**Lab ID:** C22010504-001EMSD **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total (TOC) | 5.7 | 0.50 | 5.0 | 0.39 | 107.0 | 91 | 111 | 5.6 | 1.4 | 10.0 | |

Associated Samples: **B22010979-001E**
- TOC Range is 5.7 to 5.8

**Run ID: Run Order:** SUB-C278828: 3 **SampType:** Continuing Calibration Verification Standard **Batch ID:** C_R278828
**Method:** SW9060A **Analysis Date:** 01/18/2022 14:30 **Prep Date:**
**Lab ID:** CCV **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total (TOC) | 5.1 | 0.50 | 5.0 | | 102.0 | 90 | 110 | | | | |

Associated Samples: **B22010979-001E**
- TOC Range is 5.1 to 5.1

**Run ID: Run Order:** SUB-C278828: 7 **SampType:** Continuing Calibration Verification Standard **Batch ID:** C_R278828
**Method:** SW9060A **Analysis Date:** 01/18/2022 23:24 **Prep Date:**
**Lab ID:** CCV **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Organic Carbon, Total (TOC) | 5.0 | 0.50 | 5.0 | | 99.0 | 90 | 110 | | | | |

Associated Samples: **B22010979-001E**
- TOC Range is 4.8 to 5.2

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** ICPMS206-B_220118A: 47 **SampType:** Method Blank **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/18/2022 23:03 **Prep Date:**
**Lab ID:** LRB **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | 0.0005 | | | | | | | | | |

Associated Samples: **B22010979-001A**

**Run ID: Run Order:** ICPMS206-B_220118A: 48 **SampType:** Laboratory Fortified Blank **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/18/2022 23:09 **Prep Date:**
**Lab ID:** LFB **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.045 | 0.001 | 0.050 | | 90.0 | 88 | 115 | | | | |

Associated Samples: **B22010979-001A**

**Run ID: Run Order:** ICPMS206-B_220118A: 87 **SampType:** Sample Matrix Spike **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/19/2022 02:51 **Prep Date:**
**Lab ID:** B21121957-001IMS **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.047 | 0.001 | 0.050 | 0.00 | 94.0 | 88 | 115 | | | | |

Associated Samples: **B22010979-001A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** ICPMS206-B_220118A: 88 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/19/2022 02:57 **Prep Date:**
**Lab ID:** B21121957-001IMSD **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.047 | 0.001 | 0.050 | 0.00 | 94.0 | 88 | 115 | 0.047 | 0.4 | 20.0 | |

Associated Samples: **B22010979-001A**

**Run ID: Run Order:** ICPMS206-B_220118A: 136 **SampType:** Sample Matrix Spike **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/19/2022 07:34 **Prep Date:**
**Lab ID:** B22010973-001AMS **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.048 | 0.001 | 0.050 | 0.00 | 95.0 | 88 | 115 | | | | |

Associated Samples: **B22010979-001A**

**Run ID: Run Order:** ICPMS206-B_220118A: 137 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/19/2022 07:39 **Prep Date:**
**Lab ID:** B22010973-001AMSD **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.046 | 0.001 | 0.050 | 0.00 | 92.0 | 88 | 115 | 0.048 | 3.3 | 20.0 | |

Associated Samples: **B22010979-001A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** ICPMS206-B_220118A: 86 **SampType:** Serial Dilution **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/19/2022 02:46 **Prep Date:**
**Lab ID:** B21121957-001IDIL **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | 0.001 | | | | | | 0.00 | | 10.0 | |

Associated Samples: **B22010979-001A**

**Run ID: Run Order:** ICPMS206-B_220118A: 135 **SampType:** Serial Dilution **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/19/2022 07:28 **Prep Date:**
**Lab ID:** B22010973-001ADIL **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | 0.001 | | | | | | 0.00 | | 10.0 | |

Associated Samples: **B22010979-001A**

**Run ID: Run Order:** ICPMS206-B_220118A: 57 **SampType:** Method Blank **Batch ID:** 162992
**Method:** SW6020 **Analysis Date:** 01/19/2022 00:01 **Prep Date:** 01/17/2022 13:21
**Lab ID:** MB-162992 **Units:** mg/L **Prep Method:** SW3010A

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | 0.0005 | | | | | | | | | |

Associated Samples: **B22010979-001B**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** ICPMS206-B_220118A: 60 **SampType:** Laboratory Control Sample **Batch ID:** 162992
**Method:** SW6020 **Analysis Date:** 01/19/2022 00:18 **Prep Date:** 01/17/2022 13:21
**Lab ID:** LCS4-162992 **Units:** mg/L **Prep Method:** SW3010A

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.099 | 0.001 | 0.100 | | 99.0 | 88 | 115 | | | | |

Associated Samples: **B22010979-001B**

**Run ID: Run Order:** ICPMS206-B_220118A: 127 **SampType:** Sample Matrix Spike **Batch ID:** 162992
**Method:** SW6020 **Analysis Date:** 01/19/2022 06:42 **Prep Date:** 01/17/2022 13:38
**Lab ID:** B22010971-001BMS4 **Units:** mg/L **Prep Method:** SW3010A

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.100 | 0.001 | 0.100 | 0.00 | 100.0 | 88 | 115 | | | | |

Associated Samples: **B22010979-001B**

**Run ID: Run Order:** ICPMS206-B_220118A: 128 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** 162992
**Method:** SW6020 **Analysis Date:** 01/19/2022 06:47 **Prep Date:** 01/17/2022 13:38
**Lab ID:** B22010971-001BMSD4 **Units:** mg/L **Prep Method:** SW3010A

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.096 | 0.001 | 0.100 | 0.00 | 96.0 | 88 | 115 | 0.100 | 3.8 | 20.0 | |

Associated Samples: **B22010979-001B**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** ICPMS206-B_220118A: 126 **SampType:** Post Digestion/Distillation Spike **Batch ID:** 162992
**Method:** SW6020 **Analysis Date:** 01/19/2022 06:36 **Prep Date:** 01/17/2022 13:38
**Lab ID:** B22010971-001BPDS1 **Units:** mg/L **Prep Method:** SW3010A

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.048 | 0.001 | 0.052 | 0.00 | 92.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001B**

**Run ID: Run Order:** ICPMS206-B_220118A: 125 **SampType:** Serial Dilution **Batch ID:** 162992
**Method:** SW6020 **Analysis Date:** 01/19/2022 06:30 **Prep Date:** 01/17/2022 13:38
**Lab ID:** B22010971-001BDIL **Units:** mg/L **Prep Method:** SW3010A

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | 0.001 | | | | | | 0.00 | | 10.0 | |

Associated Samples: **B22010979-001B**

**Run ID: Run Order:** ICPMS206-B_220118A: 146 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/19/2022 08:31 **Prep Date:**
**Lab ID:** CCV **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.046 | 0.001 | 0.050 | | 93.0 | 90 | 110 | | | | |

Associated Samples: **B22010979-001A, B22010979-001B**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** ICPMS206-B_220118A: 156 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373351
**Method:** SW6020 **Analysis Date:** 01/19/2022 09:28 **Prep Date:**
**Lab ID:** CCV **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 0.047 | 0.001 | 0.050 | | 93.0 | 90 | 110 | | | | |

Associated Samples: **B22010979-001A, B22010979-001B**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 4 **SampType:** Method Blank **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 12:19 **Prep Date:**
**Lab ID:** MBLK012022_ **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.50 | | | | | | | | | |
| Bromobenzene | ND | 0.50 | | | | | | | | | |
| Bromochloromethane | ND | 0.50 | | | | | | | | | |
| Bromodichloromethane | ND | 0.50 | | | | | | | | | |
| Bromoform | ND | 0.50 | | | | | | | | | |
| Carbon tetrachloride | ND | 0.50 | | | | | | | | | |
| Chlorobenzene | ND | 0.50 | | | | | | | | | |
| Chlorodibromomethane | ND | 0.50 | | | | | | | | | |
| Chloroethane | ND | 0.50 | | | | | | | | | |
| Chloroform | ND | 0.50 | | | | | | | | | |
| Chloromethane | ND | 0.50 | | | | | | | | | |
| 1,2-Dibromoethane | ND | 0.50 | | | | | | | | | |
| 2-Chlorotoluene | ND | 0.50 | | | | | | | | | |
| Dibromomethane | ND | 0.50 | | | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.50 | | | | | | | | | |
| 4-Chlorotoluene | ND | 0.50 | | | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.50 | | | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.50 | | | | | | | | | |
| Dichlorodifluoromethane | ND | 0.50 | | | | | | | | | |
| 1,1-Dichloroethane | ND | 0.50 | | | | | | | | | |
| 1,2-Dichloroethane | ND | 0.50 | | | | | | | | | |
| 1,1-Dichloroethene | ND | 0.50 | | | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.50 | | | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.50 | | | | | | | | | |
| 1,2-Dichloropropane | ND | 0.50 | | | | | | | | | |
| 1,3-Dichloropropane | ND | 0.50 | | | | | | | | | |
| 2,2-Dichloropropane | ND | 0.50 | | | | | | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 4 **SampType:** Method Blank **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 12:19 **Prep Date:**
**Lab ID:** MBLK012022_ **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloropropene | ND | 0.50 | | | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.50 | | | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.50 | | | | | | | | | |
| Ethylbenzene | ND | 0.50 | | | | | | | | | |
| Methyl tert-butyl ether (MTBE) | ND | 0.50 | | | | | | | | | |
| Methyl ethyl ketone | ND | 10 | | | | | | | | | |
| Methylene chloride | ND | 0.50 | | | | | | | | | |
| Styrene | ND | 0.50 | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.50 | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.50 | | | | | | | | | |
| Tetrachloroethene | ND | 0.50 | | | | | | | | | |
| Toluene | ND | 0.50 | | | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.50 | | | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.50 | | | | | | | | | |
| Trichloroethene | ND | 0.50 | | | | | | | | | |
| Trichlorofluoromethane | ND | 0.50 | | | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.50 | | | | | | | | | |
| Vinyl chloride | ND | 0.50 | | | | | | | | | |
| m+p-Xylenes | ND | 0.50 | | | | | | | | | |
| o-Xylene | ND | 0.50 | | | | | | | | | |
| Xylenes, Total | ND | 0.50 | | | | | | | | | |
| Surr: 1,2-Dichloroethane-d4 | 11 | 0.50 | 10 | | 110.0 | 81 | 118 | | | | |
| Surr: Dibromofluoromethane | 10 | 0.50 | 10 | | 102.0 | 80 | 119 | | | | |
| Surr: p-Bromofluorobenzene | 9.6 | 0.50 | 10 | | 96.0 | 85 | 114 | | | | |
| Surr: Toluene-d8 | 9.6 | 0.50 | 10 | | 96.0 | 89 | 112 | | | | |

Associated Samples: **B22010979-001F, B22010979-002A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 10:43 **Prep Date:**
**Lab ID:** LCS012022_ **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 4.8 | 0.50 | 5.0 | | 95.0 | 79 | 120 | | | | |
| Bromobenzene | 5.0 | 0.50 | 5.0 | | 101.0 | 80 | 120 | | | | |
| Bromochloromethane | 4.6 | 0.50 | 5.0 | | 91.0 | 78 | 123 | | | | |
| Bromodichloromethane | 4.8 | 0.50 | 5.0 | | 96.0 | 79 | 125 | | | | |
| Bromoform | 4.8 | 0.50 | 5.0 | | 96.0 | 66 | 130 | | | | |
| Carbon tetrachloride | 4.6 | 0.50 | 5.0 | | 91.0 | 72 | 136 | | | | |
| Chlorobenzene | 4.7 | 0.50 | 5.0 | | 95.0 | 82 | 118 | | | | |
| Chlorodibromomethane | 4.6 | 0.50 | 5.0 | | 93.0 | 74 | 126 | | | | |
| Chloroethane | 5.4 | 0.50 | 5.0 | | 109.0 | 60 | 138 | | | | |
| Chloroform | 4.3 | 0.50 | 5.0 | | 87.0 | 79 | 124 | | | | |
| Chloromethane | 4.6 | 0.50 | 5.0 | | 91.0 | 50 | 139 | | | | |
| 1,2-Dibromoethane | 4.7 | 0.50 | 5.0 | | 95.0 | 78 | 122 | | | | |
| 2-Chlorotoluene | 4.8 | 0.50 | 5.0 | | 96.0 | 79 | 122 | | | | |
| Dibromomethane | 4.8 | 0.50 | 5.0 | | 95.0 | 79 | 123 | | | | |
| 1,2-Dichlorobenzene | 4.8 | 0.50 | 5.0 | | 97.0 | 80 | 119 | | | | |
| 4-Chlorotoluene | 5.0 | 0.50 | 5.0 | | 100.0 | 78 | 122 | | | | |
| 1,3-Dichlorobenzene | 4.9 | 0.50 | 5.0 | | 97.0 | 80 | 119 | | | | |
| 1,4-Dichlorobenzene | 4.8 | 0.50 | 5.0 | | 96.0 | 79 | 118 | | | | |
| Dichlorodifluoromethane | 4.3 | 0.50 | 5.0 | | 86.0 | 32 | 152 | | | | |
| 1,1-Dichloroethane | 4.9 | 0.50 | 5.0 | | 98.0 | 77 | 125 | | | | |
| 1,2-Dichloroethane | 4.4 | 0.50 | 5.0 | | 88.0 | 73 | 128 | | | | |
| 1,1-Dichloroethene | 4.8 | 0.50 | 5.0 | | 95.0 | 71 | 131 | | | | |
| cis-1,2-Dichloroethene | 4.9 | 0.50 | 5.0 | | 98.0 | 78 | 123 | | | | |
| trans-1,2-Dichloroethene | 4.8 | 0.50 | 5.0 | | 95.0 | 75 | 124 | | | | |
| 1,2-Dichloropropane | 4.7 | 0.50 | 5.0 | | 95.0 | 78 | 122 | | | | |
| 1,3-Dichloropropane | 4.6 | 0.50 | 5.0 | | 92.0 | 80 | 119 | | | | |
| 2,2-Dichloropropane | 4.8 | 0.50 | 5.0 | | 95.0 | 60 | 139 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 10:43 **Prep Date:**
**Lab ID:** LCS012022_ **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloropropene | 4.4 | 0.50 | 5.0 | | 88.0 | 79 | 125 | | | | |
| cis-1,3-Dichloropropene | 4.5 | 0.50 | 5.0 | | 90.0 | 75 | 124 | | | | |
| trans-1,3-Dichloropropene | 4.8 | 0.50 | 5.0 | | 96.0 | 73 | 127 | | | | |
| Ethylbenzene | 4.7 | 0.50 | 5.0 | | 93.0 | 79 | 121 | | | | |
| Methyl tert-butyl ether (MTBE) | 4.9 | 0.50 | 5.0 | | 99.0 | 71 | 124 | | | | |
| Methyl ethyl ketone | 49 | 10 | 50 | | 97.0 | 56 | 143 | | | | |
| Methylene chloride | 4.6 | 0.50 | 5.0 | | 91.0 | 74 | 124 | | | | |
| Styrene | 4.8 | 0.50 | 5.0 | | 97.0 | 78 | 123 | | | | |
| 1,1,1,2-Tetrachloroethane | 4.7 | 0.50 | 5.0 | | 93.0 | 78 | 124 | | | | |
| 1,1,2,2-Tetrachloroethane | 4.9 | 0.50 | 5.0 | | 97.0 | 71 | 121 | | | | |
| Tetrachloroethene | 4.6 | 0.50 | 5.0 | | 93.0 | 74 | 129 | | | | |
| Toluene | 4.8 | 0.50 | 5.0 | | 96.0 | 80 | 121 | | | | |
| 1,1,1-Trichloroethane | 4.6 | 0.50 | 5.0 | | 93.0 | 74 | 131 | | | | |
| 1,1,2-Trichloroethane | 4.7 | 0.50 | 5.0 | | 95.0 | 80 | 119 | | | | |
| Trichloroethene | 4.7 | 0.50 | 5.0 | | 94.0 | 79 | 123 | | | | |
| Trichlorofluoromethane | 4.8 | 0.50 | 5.0 | | 96.0 | 65 | 141 | | | | |
| 1,2,3-Trichloropropane | 4.7 | 0.50 | 5.0 | | 95.0 | 73 | 125 | | | | |
| Vinyl chloride | 4.8 | 0.50 | 5.0 | | 96.0 | 58 | 137 | | | | |
| m+p-Xylenes | 9.4 | 0.50 | 10 | | 94.0 | 80 | 121 | | | | |
| o-Xylene | 4.8 | 0.50 | 5.0 | | 96.0 | 78 | 122 | | | | |
| Xylenes, Total | 14 | 0.50 | 15 | | 94.0 | 79 | 121 | | | | |
| Surr: 1,2-Dichloroethane-d4 | 11 | 0.50 | 10 | | 109.0 | 81 | 118 | | | | |
| Surr: Dibromofluoromethane | 9.3 | 0.50 | 10 | | 93.0 | 80 | 119 | | | | |
| Surr: p-Bromofluorobenzene | 10 | 0.50 | 10 | | 104.0 | 85 | 114 | | | | |
| Surr: Toluene-d8 | 11 | 0.50 | 10 | | 109.0 | 89 | 112 | | | | |

Associated Samples: **B22010979-001F, B22010979-002A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 20 **SampType:** Sample Matrix Spike **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 19:35 **Prep Date:**
**Lab ID:** B22010977-001FMS **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 4.9 | 0.50 | 5.0 | 0.0 | 98.0 | 79 | 120 | | | | |
| Bromobenzene | 5.1 | 0.50 | 5.0 | 0.0 | 102.0 | 80 | 120 | | | | |
| Bromochloromethane | 4.9 | 0.50 | 5.0 | 0.0 | 98.0 | 78 | 123 | | | | |
| Bromodichloromethane | 4.1 | 0.50 | 5.0 | 0.0 | 83.0 | 79 | 125 | | | | |
| Bromoform | 4.9 | 0.50 | 5.0 | 0.0 | 97.0 | 66 | 130 | | | | |
| Carbon tetrachloride | 5.5 | 0.50 | 5.0 | 0.0 | 109.0 | 72 | 136 | | | | |
| Chlorobenzene | 5.1 | 0.50 | 5.0 | 0.0 | 103.0 | 82 | 118 | | | | |
| Chlorodibromomethane | 4.9 | 0.50 | 5.0 | 0.0 | 99.0 | 74 | 126 | | | | |
| Chloroethane | 6.0 | 0.50 | 5.0 | 0.0 | 119.0 | 60 | 138 | | | | |
| Chloroform | 4.7 | 0.50 | 5.0 | 0.0 | 95.0 | 79 | 124 | | | | |
| Chloromethane | 5.9 | 0.50 | 5.0 | 0.0 | 118.0 | 50 | 139 | | | | |
| 1,2-Dibromoethane | 4.8 | 0.50 | 5.0 | 0.0 | 97.0 | 78 | 122 | | | | |
| 2-Chlorotoluene | 5.1 | 0.50 | 5.0 | 0.0 | 101.0 | 79 | 122 | | | | |
| Dibromomethane | 4.0 | 0.50 | 5.0 | 0.0 | 79.0 | 79 | 123 | | | | |
| 1,2-Dichlorobenzene | 5.1 | 0.50 | 5.0 | 0.0 | 102.0 | 80 | 119 | | | | |
| 4-Chlorotoluene | 5.2 | 0.50 | 5.0 | 0.0 | 105.0 | 78 | 122 | | | | |
| 1,3-Dichlorobenzene | 5.2 | 0.50 | 5.0 | 0.0 | 103.0 | 80 | 119 | | | | |
| 1,4-Dichlorobenzene | 5.1 | 0.50 | 5.0 | 0.0 | 101.0 | 79 | 118 | | | | |
| Dichlorodifluoromethane | 5.9 | 0.50 | 5.0 | 0.0 | 119.0 | 32 | 152 | | | | |
| 1,1-Dichloroethane | 5.0 | 0.50 | 5.0 | 0.0 | 100.0 | 77 | 125 | | | | |
| 1,2-Dichloroethane | 5.1 | 0.50 | 5.0 | 0.0 | 102.0 | 73 | 128 | | | | |
| 1,1-Dichloroethene | 5.1 | 0.50 | 5.0 | 0.0 | 103.0 | 71 | 131 | | | | |
| cis-1,2-Dichloroethene | 5.0 | 0.50 | 5.0 | 0.0 | 99.0 | 78 | 123 | | | | |
| trans-1,2-Dichloroethene | 4.9 | 0.50 | 5.0 | 0.0 | 99.0 | 75 | 124 | | | | |
| 1,2-Dichloropropane | 3.8 | 0.50 | 5.0 | 0.0 | 75.0 | 78 | 122 | | | | S |
| 1,3-Dichloropropane | 4.9 | 0.50 | 5.0 | 0.0 | 97.0 | 80 | 119 | | | | |
| 2,2-Dichloropropane | 5.2 | 0.50 | 5.0 | 0.0 | 103.0 | 60 | 139 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 20 **SampType:** Sample Matrix Spike **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 19:35 **Prep Date:**
**Lab ID:** B22010977-001FMS **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloropropene | 4.9 | 0.50 | 5.0 | 0.0 | 98.0 | 79 | 125 | | | | |
| cis-1,3-Dichloropropene | 3.8 | 0.50 | 5.0 | 0.0 | 76.0 | 75 | 124 | | | | |
| trans-1,3-Dichloropropene | 4.5 | 0.50 | 5.0 | 0.0 | 91.0 | 73 | 127 | | | | |
| Ethylbenzene | 5.0 | 0.50 | 5.0 | 0.0 | 100.0 | 79 | 121 | | | | |
| Methyl tert-butyl ether (MTBE) | 5.3 | 0.50 | 5.0 | 0.0 | 106.0 | 71 | 124 | | | | |
| Methyl ethyl ketone | 48 | 10 | 50 | 0.0 | 96.0 | 56 | 143 | | | | |
| Methylene chloride | 4.5 | 0.50 | 5.0 | 0.0 | 90.0 | 74 | 124 | | | | |
| Styrene | 5.1 | 0.50 | 5.0 | 0.0 | 102.0 | 78 | 123 | | | | |
| 1,1,1,2-Tetrachloroethane | 4.9 | 0.50 | 5.0 | 0.0 | 98.0 | 78 | 124 | | | | |
| 1,1,2,2-Tetrachloroethane | 5.1 | 0.50 | 5.0 | 0.0 | 101.0 | 71 | 121 | | | | |
| Tetrachloroethene | 5.0 | 0.50 | 5.0 | 0.0 | 99.0 | 74 | 129 | | | | |
| Toluene | 4.2 | 0.50 | 5.0 | 0.0 | 85.0 | 80 | 121 | | | | |
| 1,1,1-Trichloroethane | 5.2 | 0.50 | 5.0 | 0.0 | 104.0 | 74 | 131 | | | | |
| 1,1,2-Trichloroethane | 5.2 | 0.50 | 5.0 | 0.0 | 103.0 | 80 | 119 | | | | |
| Trichloroethene | 4.0 | 0.50 | 5.0 | 0.0 | 81.0 | 79 | 123 | | | | |
| Trichlorofluoromethane | 6.0 | 0.50 | 5.0 | 0.0 | 119.0 | 65 | 141 | | | | |
| 1,2,3-Trichloropropane | 4.7 | 0.50 | 5.0 | 0.0 | 94.0 | 73 | 125 | | | | |
| Vinyl chloride | 6.2 | 0.50 | 5.0 | 0.0 | 123.0 | 58 | 137 | | | | |
| m+p-Xylenes | 9.8 | 0.50 | 10 | 0.0 | 98.0 | 80 | 121 | | | | |
| o-Xylene | 5.0 | 0.50 | 5.0 | 0.0 | 101.0 | 78 | 122 | | | | |
| Xylenes, Total | 15 | 0.50 | 15 | 0.0 | 99.0 | 79 | 121 | | | | |
| Surr: 1,2-Dichloroethane-d4 | 11 | 0.50 | 10 | 0.0 | 105.0 | 81 | 118 | | | | |
| Surr: Dibromofluoromethane | 10 | 0.50 | 10 | 0.0 | 103.0 | 80 | 119 | | | | |
| Surr: p-Bromofluorobenzene | 9.8 | 0.50 | 10 | 0.0 | 98.0 | 85 | 114 | | | | |
| Surr: Toluene-d8 | 8.5 | 0.50 | 10 | 0.0 | 85.0 | 89 | 112 | | | | S |

Associated Samples: **B22010979-001F, B22010979-002A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 21 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 20:02 **Prep Date:**
**Lab ID:** B22010977-001FMSD **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 5.4 | 0.50 | 5.0 | 0.0 | 107.0 | 79 | 120 | 4.9 | 8.9 | 20.0 | |
| Bromobenzene | 5.5 | 0.50 | 5.0 | 0.0 | 110.0 | 80 | 120 | 5.1 | 7.0 | 20.0 | |
| Bromochloromethane | 5.0 | 0.50 | 5.0 | 0.0 | 101.0 | 78 | 123 | 4.9 | 2.8 | 20.0 | |
| Bromodichloromethane | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 79 | 125 | 4.1 | 26.0 | 20.0 | R |
| Bromoform | 5.0 | 0.50 | 5.0 | 0.0 | 100.0 | 66 | 130 | 4.9 | 2.7 | 20.0 | |
| Carbon tetrachloride | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 72 | 136 | 5.5 | 1.0 | 20.0 | |
| Chlorobenzene | 5.5 | 0.50 | 5.0 | 0.0 | 111.0 | 82 | 118 | 5.1 | 7.3 | 20.0 | |
| Chlorodibromomethane | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 74 | 126 | 4.9 | 8.9 | 20.0 | |
| Chloroethane | 6.0 | 0.50 | 5.0 | 0.0 | 120.0 | 60 | 138 | 6.0 | 0.2 | 20.0 | |
| Chloroform | 4.9 | 0.50 | 5.0 | 0.0 | 99.0 | 79 | 124 | 4.7 | 4.1 | 20.0 | |
| Chloromethane | 4.9 | 0.50 | 5.0 | 0.0 | 97.0 | 50 | 139 | 5.9 | 19.0 | 20.0 | |
| 1,2-Dibromoethane | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 78 | 122 | 4.8 | 11.0 | 20.0 | |
| 2-Chlorotoluene | 5.6 | 0.50 | 5.0 | 0.0 | 111.0 | 79 | 122 | 5.1 | 9.1 | 20.0 | |
| Dibromomethane | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 79 | 123 | 4.0 | 30.0 | 20.0 | R |
| 1,2-Dichlorobenzene | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 80 | 119 | 5.1 | 6.1 | 20.0 | |
| 4-Chlorotoluene | 5.5 | 0.50 | 5.0 | 0.0 | 110.0 | 78 | 122 | 5.2 | 5.4 | 20.0 | |
| 1,3-Dichlorobenzene | 5.5 | 0.50 | 5.0 | 0.0 | 110.0 | 80 | 119 | 5.2 | 6.1 | 20.0 | |
| 1,4-Dichlorobenzene | 5.3 | 0.50 | 5.0 | 0.0 | 107.0 | 79 | 118 | 5.1 | 5.4 | 20.0 | |
| Dichlorodifluoromethane | 4.9 | 0.50 | 5.0 | 0.0 | 98.0 | 32 | 152 | 5.9 | 19.0 | 20.0 | |
| 1,1-Dichloroethane | 5.5 | 0.50 | 5.0 | 0.0 | 109.0 | 77 | 125 | 5.0 | 9.0 | 20.0 | |
| 1,2-Dichloroethane | 5.0 | 0.50 | 5.0 | 0.0 | 100.0 | 73 | 128 | 5.1 | 1.6 | 20.0 | |
| 1,1-Dichloroethene | 5.6 | 0.50 | 5.0 | 0.0 | 112.0 | 71 | 131 | 5.1 | 8.7 | 20.0 | |
| cis-1,2-Dichloroethene | 5.3 | 0.50 | 5.0 | 0.0 | 107.0 | 78 | 123 | 5.0 | 7.6 | 20.0 | |
| trans-1,2-Dichloroethene | 5.3 | 0.50 | 5.0 | 0.0 | 106.0 | 75 | 124 | 4.9 | 7.3 | 20.0 | |
| 1,2-Dichloropropane | 5.3 | 0.50 | 5.0 | 0.0 | 107.0 | 78 | 122 | 3.8 | 34.0 | 20.0 | R |
| 1,3-Dichloropropane | 5.2 | 0.50 | 5.0 | 0.0 | 104.0 | 80 | 119 | 4.9 | 6.9 | 20.0 | |
| 2,2-Dichloropropane | 5.2 | 0.50 | 5.0 | 0.0 | 105.0 | 60 | 139 | 5.2 | 1.6 | 20.0 | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 21 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 20:02 **Prep Date:**
**Lab ID:** B22010977-001FMSD **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloropropene | 5.2 | 0.50 | 5.0 | 0.0 | 104.0 | 79 | 125 | 4.9 | 6.4 | 20.0 | |
| cis-1,3-Dichloropropene | 4.9 | 0.50 | 5.0 | 0.0 | 99.0 | 75 | 124 | 3.8 | 26.0 | 20.0 | R |
| trans-1,3-Dichloropropene | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 73 | 127 | 4.5 | 18.0 | 20.0 | |
| Ethylbenzene | 5.3 | 0.50 | 5.0 | 0.0 | 107.0 | 79 | 121 | 5.0 | 6.1 | 20.0 | |
| Methyl tert-butyl ether (MTBE) | 5.4 | 0.50 | 5.0 | 0.0 | 107.0 | 71 | 124 | 5.3 | 1.1 | 20.0 | |
| Methyl ethyl ketone | 50 | 10 | 50 | 0.0 | 100.0 | 56 | 143 | 48 | 4.6 | 20.0 | |
| Methylene chloride | 5.0 | 0.50 | 5.0 | 0.0 | 100.0 | 74 | 124 | 4.5 | 11.0 | 20.0 | |
| Styrene | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 78 | 123 | 5.1 | 5.3 | 20.0 | |
| 1,1,1,2-Tetrachloroethane | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 78 | 124 | 4.9 | 9.2 | 20.0 | |
| 1,1,2,2-Tetrachloroethane | 5.4 | 0.50 | 5.0 | 0.0 | 107.0 | 71 | 121 | 5.1 | 6.0 | 20.0 | |
| Tetrachloroethene | 5.3 | 0.50 | 5.0 | 0.0 | 106.0 | 74 | 129 | 5.0 | 6.2 | 20.0 | |
| Toluene | 5.5 | 0.50 | 5.0 | 0.0 | 110.0 | 80 | 121 | 4.2 | 26.0 | 20.0 | R |
| 1,1,1-Trichloroethane | 5.3 | 0.50 | 5.0 | 0.0 | 106.0 | 74 | 131 | 5.2 | 1.4 | 20.0 | |
| 1,1,2-Trichloroethane | 5.5 | 0.50 | 5.0 | 0.0 | 109.0 | 80 | 119 | 5.2 | 5.6 | 20.0 | |
| Trichloroethene | 5.3 | 0.50 | 5.0 | 0.0 | 106.0 | 79 | 123 | 4.0 | 27.0 | 20.0 | R |
| Trichlorofluoromethane | 5.4 | 0.50 | 5.0 | 0.0 | 109.0 | 65 | 141 | 6.0 | 9.4 | 20.0 | |
| 1,2,3-Trichloropropane | 5.1 | 0.50 | 5.0 | 0.0 | 103.0 | 73 | 125 | 4.7 | 8.9 | 20.0 | |
| Vinyl chloride | 5.2 | 0.50 | 5.0 | 0.0 | 103.0 | 58 | 137 | 6.2 | 18.0 | 20.0 | |
| m+p-Xylenes | 11 | 0.50 | 10 | 0.0 | 105.0 | 80 | 121 | 9.8 | 6.4 | 20.0 | |
| o-Xylene | 5.4 | 0.50 | 5.0 | 0.0 | 108.0 | 78 | 122 | 5.0 | 6.5 | 20.0 | |
| Xylenes, Total | 16 | 0.50 | 15 | 0.0 | 106.0 | 79 | 121 | 15 | 6.4 | 20.0 | |
| Surr: 1,2-Dichloroethane-d4 | 11 | 0.50 | 10 | 0.0 | 108.0 | 81 | 118 | 0.0 | | | |
| Surr: Dibromofluoromethane | 11 | 0.50 | 10 | 0.0 | 106.0 | 80 | 119 | 0.0 | | | |
| Surr: p-Bromofluorobenzene | 10 | 0.50 | 10 | 0.0 | 102.0 | 85 | 114 | 0.0 | | | |
| Surr: Toluene-d8 | 11 | 0.50 | 10 | 0.0 | 110.0 | 89 | 112 | 0.0 | | | |

Associated Samples: **B22010979-001F, B22010979-002A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 10:06 **Prep Date:**
**Lab ID:** CCV012022_ **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |
| Bromobenzene | 5.1 | 0.50 | 5.0 | | 101.0 | 80 | 120 | | | | |
| Bromochloromethane | 5.0 | 0.50 | 5.0 | | 101.0 | 80 | 120 | | | | |
| Bromodichloromethane | 4.9 | 0.50 | 5.0 | | 98.0 | 80 | 120 | | | | |
| Bromoform | 4.9 | 0.50 | 5.0 | | 99.0 | 80 | 120 | | | | |
| Carbon tetrachloride | 4.9 | 0.50 | 5.0 | | 97.0 | 80 | 120 | | | | |
| Chlorobenzene | 5.0 | 0.50 | 5.0 | | 99.0 | 80 | 120 | | | | |
| Chlorodibromomethane | 5.1 | 0.50 | 5.0 | | 102.0 | 80 | 120 | | | | |
| Chloroethane | 5.6 | 0.50 | 5.0 | | 113.0 | 80 | 120 | | | | |
| Chloroform | 4.8 | 0.50 | 5.0 | | 95.0 | 80 | 120 | | | | |
| Chloromethane | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |
| 1,2-Dibromoethane | 5.1 | 0.50 | 5.0 | | 102.0 | 80 | 120 | | | | |
| 2-Chlorotoluene | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |
| Dibromomethane | 5.1 | 0.50 | 5.0 | | 103.0 | 80 | 120 | | | | |
| 1,2-Dichlorobenzene | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |
| 4-Chlorotoluene | 5.1 | 0.50 | 5.0 | | 103.0 | 80 | 120 | | | | |
| 1,3-Dichlorobenzene | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |
| 1,4-Dichlorobenzene | 4.9 | 0.50 | 5.0 | | 98.0 | 80 | 120 | | | | |
| Dichlorodifluoromethane | 4.8 | 0.50 | 5.0 | | 96.0 | 80 | 120 | | | | |
| 1,1-Dichloroethane | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |
| 1,2-Dichloroethane | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |
| 1,1-Dichloroethene | 4.8 | 0.50 | 5.0 | | 96.0 | 80 | 120 | | | | |
| cis-1,2-Dichloroethene | 5.1 | 0.50 | 5.0 | | 101.0 | 80 | 120 | | | | |
| trans-1,2-Dichloroethene | 4.9 | 0.50 | 5.0 | | 98.0 | 80 | 120 | | | | |
| 1,2-Dichloropropane | 4.9 | 0.50 | 5.0 | | 98.0 | 80 | 120 | | | | |
| 1,3-Dichloropropane | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |
| 2,2-Dichloropropane | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 10:06 **Prep Date:**
**Lab ID:** CCV012022_ **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloropropene | 5.0 | 0.50 | 5.0 | | 101.0 | 80 | 120 | | | | |
| cis-1,3-Dichloropropene | 4.9 | 0.50 | 5.0 | | 98.0 | 80 | 120 | | | | |
| trans-1,3-Dichloropropene | 5.1 | 0.50 | 5.0 | | 102.0 | 80 | 120 | | | | |
| Ethylbenzene | 4.9 | 0.50 | 5.0 | | 97.0 | 80 | 120 | | | | |
| Methyl tert-butyl ether (MTBE) | 5.3 | 0.50 | 5.0 | | 105.0 | 80 | 120 | | | | |
| Methyl ethyl ketone | 51 | 10 | 50 | | 102.0 | 80 | 120 | | | | |
| Methylene chloride | 4.8 | 0.50 | 5.0 | | 96.0 | 80 | 120 | | | | |
| Styrene | 4.9 | 0.50 | 5.0 | | 99.0 | 80 | 120 | | | | |
| 1,1,1,2-Tetrachloroethane | 4.9 | 0.50 | 5.0 | | 98.0 | 80 | 120 | | | | |
| 1,1,2,2-Tetrachloroethane | 5.1 | 0.50 | 5.0 | | 102.0 | 80 | 120 | | | | |
| Tetrachloroethene | 4.9 | 0.50 | 5.0 | | 98.0 | 80 | 120 | | | | |
| Toluene | 5.0 | 0.50 | 5.0 | | 99.0 | 80 | 120 | | | | |
| 1,1,1-Trichloroethane | 5.0 | 0.50 | 5.0 | | 100.0 | 80 | 120 | | | | |
| 1,1,2-Trichloroethane | 5.1 | 0.50 | 5.0 | | 101.0 | 80 | 120 | | | | |
| Trichloroethene | 5.0 | 0.50 | 5.0 | | 99.0 | 80 | 120 | | | | |
| Trichlorofluoromethane | 4.7 | 0.50 | 5.0 | | 95.0 | 80 | 120 | | | | |
| 1,2,3-Trichloropropane | 5.1 | 0.50 | 5.0 | | 103.0 | 80 | 120 | | | | |
| Vinyl chloride | 5.1 | 0.50 | 5.0 | | 102.0 | 80 | 120 | | | | |
| m+p-Xylenes | 9.9 | 0.50 | 10 | | 99.0 | 80 | 120 | | | | |
| o-Xylene | 4.9 | 0.50 | 5.0 | | 98.0 | 80 | 120 | | | | |
| Xylenes, Total | 15 | 0.50 | 15 | | 99.0 | 80 | 120 | | | | |
| Surr: 1,2-Dichloroethane-d4 | 11 | 0.50 | 10 | | 112.0 | 80 | 120 | | | | |
| Surr: Dibromofluoromethane | 9.5 | 0.50 | 10 | | 95.0 | 80 | 120 | | | | |
| Surr: p-Bromofluorobenzene | 11 | 0.50 | 10 | | 107.0 | 80 | 120 | | | | |
| Surr: Toluene-d8 | 11 | 0.50 | 10 | | 108.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001F, B22010979-002A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 22 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 20:57 **Prep Date:**
**Lab ID:** CCV012022_Closing **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 5.1 | 0.50 | 5.0 | | 101.0 | 50 | 150 | | | | |
| Bromobenzene | 5.0 | 0.50 | 5.0 | | 101.0 | 50 | 150 | | | | |
| Bromochloromethane | 4.8 | 0.50 | 5.0 | | 97.0 | 50 | 150 | | | | |
| Bromodichloromethane | 5.1 | 0.50 | 5.0 | | 102.0 | 50 | 150 | | | | |
| Bromoform | 4.7 | 0.50 | 5.0 | | 93.0 | 50 | 150 | | | | |
| Carbon tetrachloride | 5.2 | 0.50 | 5.0 | | 103.0 | 50 | 150 | | | | |
| Chlorobenzene | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| Chlorodibromomethane | 4.8 | 0.50 | 5.0 | | 97.0 | 50 | 150 | | | | |
| Chloroethane | 5.5 | 0.50 | 5.0 | | 109.0 | 50 | 150 | | | | |
| Chloroform | 4.8 | 0.50 | 5.0 | | 96.0 | 50 | 150 | | | | |
| Chloromethane | 4.8 | 0.50 | 5.0 | | 96.0 | 50 | 150 | | | | |
| 1,2-Dibromoethane | 4.9 | 0.50 | 5.0 | | 98.0 | 50 | 150 | | | | |
| 2-Chlorotoluene | 5.1 | 0.50 | 5.0 | | 103.0 | 50 | 150 | | | | |
| Dibromomethane | 5.2 | 0.50 | 5.0 | | 103.0 | 50 | 150 | | | | |
| 1,2-Dichlorobenzene | 4.9 | 0.50 | 5.0 | | 98.0 | 50 | 150 | | | | |
| 4-Chlorotoluene | 5.2 | 0.50 | 5.0 | | 104.0 | 50 | 150 | | | | |
| 1,3-Dichlorobenzene | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| 1,4-Dichlorobenzene | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| Dichlorodifluoromethane | 4.9 | 0.50 | 5.0 | | 97.0 | 50 | 150 | | | | |
| 1,1-Dichloroethane | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| 1,2-Dichloroethane | 4.6 | 0.50 | 5.0 | | 92.0 | 50 | 150 | | | | |
| 1,1-Dichloroethene | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| cis-1,2-Dichloroethene | 5.0 | 0.50 | 5.0 | | 99.0 | 50 | 150 | | | | |
| trans-1,2-Dichloroethene | 4.8 | 0.50 | 5.0 | | 97.0 | 50 | 150 | | | | |
| 1,2-Dichloropropane | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| 1,3-Dichloropropane | 4.9 | 0.50 | 5.0 | | 99.0 | 50 | 150 | | | | |
| 2,2-Dichloropropane | 4.8 | 0.50 | 5.0 | | 96.0 | 50 | 150 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** VOA5975C.I_220120A: 22 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373592
**Method:** SW8260B **Analysis Date:** 01/20/2022 20:57 **Prep Date:**
**Lab ID:** CCV012022_Closing **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloropropene | 5.2 | 0.50 | 5.0 | | 103.0 | 50 | 150 | | | | |
| cis-1,3-Dichloropropene | 4.8 | 0.50 | 5.0 | | 96.0 | 50 | 150 | | | | |
| trans-1,3-Dichloropropene | 4.8 | 0.50 | 5.0 | | 96.0 | 50 | 150 | | | | |
| Ethylbenzene | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| Methyl tert-butyl ether (MTBE) | 4.5 | 0.50 | 5.0 | | 91.0 | 50 | 150 | | | | |
| Methyl ethyl ketone | 46 | 10 | 50 | | 91.0 | 50 | 150 | | | | |
| Methylene chloride | 4.7 | 0.50 | 5.0 | | 94.0 | 50 | 150 | | | | |
| Styrene | 5.1 | 0.50 | 5.0 | | 102.0 | 50 | 150 | | | | |
| 1,1,1,2-Tetrachloroethane | 4.9 | 0.50 | 5.0 | | 98.0 | 50 | 150 | | | | |
| 1,1,2,2-Tetrachloroethane | 4.8 | 0.50 | 5.0 | | 97.0 | 50 | 150 | | | | |
| Tetrachloroethene | 5.0 | 0.50 | 5.0 | | 101.0 | 50 | 150 | | | | |
| Toluene | 5.1 | 0.50 | 5.0 | | 103.0 | 50 | 150 | | | | |
| 1,1,1-Trichloroethane | 5.0 | 0.50 | 5.0 | | 101.0 | 50 | 150 | | | | |
| 1,1,2-Trichloroethane | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| Trichloroethene | 5.1 | 0.50 | 5.0 | | 102.0 | 50 | 150 | | | | |
| Trichlorofluoromethane | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| 1,2,3-Trichloropropane | 5.1 | 0.50 | 5.0 | | 103.0 | 50 | 150 | | | | |
| Vinyl chloride | 4.8 | 0.50 | 5.0 | | 97.0 | 50 | 150 | | | | |
| m+p-Xylenes | 10 | 0.50 | 10 | | 102.0 | 50 | 150 | | | | |
| o-Xylene | 5.0 | 0.50 | 5.0 | | 100.0 | 50 | 150 | | | | |
| Xylenes, Total | 15 | 0.50 | 15 | | 101.0 | 50 | 150 | | | | |
| Surr: 1,2-Dichloroethane-d4 | 11 | 0.50 | 10 | | 108.0 | 50 | 150 | | | | |
| Surr: Dibromofluoromethane | 11 | 0.50 | 10 | | 105.0 | 50 | 150 | | | | |
| Surr: p-Bromofluorobenzene | 10 | 0.50 | 10 | | 104.0 | 50 | 150 | | | | |
| Surr: Toluene-d8 | 11 | 0.50 | 10 | | 111.0 | 50 | 150 | | | | |

Associated Samples: **B22010979-001F, B22010979-002A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** GECD.I_220119B: 10 **SampType:** Method Blank **Batch ID:** 163023
**Method:** SW8011 **Analysis Date:** 01/19/2022 14:35 **Prep Date:** 01/18/2022 09:43
**Lab ID:** MB-163023 **Units:** ug/L **Prep Method:** SW8011

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | ND | 0.0050 | | | | | | | | | |
| Surr: 1,1,1,2-Tetrachloroethane | 0.087 | 0.020 | 0.10 | | 87.0 | 70 | 130 | | | | |

Associated Samples: **B22010979-001H, B22010979-004A**

**Run ID: Run Order:** GECD.I_220119B: 11 **SampType:** Laboratory Control Sample **Batch ID:** 163023
**Method:** SW8011 **Analysis Date:** 01/19/2022 14:54 **Prep Date:** 01/18/2022 09:43
**Lab ID:** LCS-163023 **Units:** ug/L **Prep Method:** SW8011

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | 0.24 | 0.010 | 0.25 | | 95.0 | 60 | 140 | | | | |
| Surr: 1,1,1,2-Tetrachloroethane | 0.087 | 0.020 | 0.10 | | 87.0 | 70 | 130 | | | | |

Associated Samples: **B22010979-001H, B22010979-004A**

**Run ID: Run Order:** GECD.I_220119B: 12 **SampType:** Laboratory Control Sample **Batch ID:** 163023
**Method:** SW8011 **Analysis Date:** 01/19/2022 15:15 **Prep Date:** 01/18/2022 09:44
**Lab ID:** LCS1-163023 **Units:** ug/L **Prep Method:** SW8011

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | 0.10 | 0.010 | 0.10 | | 104.0 | 60 | 140 | | | | |
| Surr: 1,1,1,2-Tetrachloroethane | 0.087 | 0.020 | 0.10 | | 87.0 | 70 | 130 | | | | |

Associated Samples: **B22010979-001H, B22010979-004A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** GECD.I_220119B: 22 **SampType:** Sample Matrix Spike **Batch ID:** 163023
**Method:** SW8011 **Analysis Date:** 01/19/2022 18:52 **Prep Date:** 01/18/2022 09:44
**Lab ID:** B22010971-001HMS **Units:** ug/L **Prep Method:** SW8011

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | 0.24 | 0.010 | 0.25 | 0.0 | 99.0 | 60 | 140 | | | | |
| Surr: 1,1,1,2-Tetrachloroethane | 0.087 | 0.020 | 0.099 | 0.0 | 88.0 | 70 | 130 | | | | |

Associated Samples: **B22010979-001H, B22010979-004A**

**Run ID: Run Order:** GECD.I_220119B: 23 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** 163023
**Method:** SW8011 **Analysis Date:** 01/19/2022 19:12 **Prep Date:** 01/18/2022 09:44
**Lab ID:** B22010971-001HMSD **Units:** ug/L **Prep Method:** SW8011

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | 0.25 | 0.010 | 0.25 | 0.0 | 100.0 | 60 | 140 | 0.24 | 1.3 | 20.0 | |
| Surr: 1,1,1,2-Tetrachloroethane | 0.089 | 0.020 | 0.099 | 0.0 | 90.0 | 70 | 130 | 0.0 | | | |

Associated Samples: **B22010979-001H, B22010979-004A**

**Run ID: Run Order:** GECD.I_220119B: 24 **SampType:** Continuing Calibration Verification Standard **Batch ID:** 163023
**Method:** SW8011 **Analysis Date:** 01/19/2022 19:51 **Prep Date:** 01/18/2022 09:44
**Lab ID:** CK5-163023 **Units:** ug/L **Prep Method:** SW8011

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | 0.44 | 0.010 | 0.40 | | 109.0 | 80 | 120 | | | | |
| Surr: 1,1,1,2-Tetrachloroethane | 0.47 | 0.020 | 0.40 | | 116.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001H, B22010979-004A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** GECD.I_220119B: 35 **SampType:** Continuing Calibration Verification Standard **Batch ID:** 163023
**Method:** SW8011 **Analysis Date:** 01/20/2022 00:08 **Prep Date:** 01/18/2022 09:44
**Lab ID:** CK3-163023 **Units:** ug/L **Prep Method:** SW8011

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | 0.11 | 0.010 | 0.10 | | 110.0 | 80 | 120 | | | | |
| Surr: 1,1,1,2-Tetrachloroethane | 0.10 | 0.020 | 0.10 | | 102.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001H, B22010979-004A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** PE 1_220117A: 20 **SampType:** Method Blank **Batch ID:** R373334
**Method:** SW8015C **Analysis Date:** 01/17/2022 22:59 **Prep Date:**
**Lab ID:** MBLK_0117PE128r **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C6 to C10 | ND | 10 | | | | | | | | | |
| Total Purgeable Hydrocarbons | ND | 10 | | | | | | | | | |
| Surr: Trifluorotoluene | 21 | 1.0 | 25 | | 84.0 | 70 | 130 | | | | |

Associated Samples: **B22010979-001G, B22010979-003A**

**Run ID: Run Order:** PE 1_220117A: 32 **SampType:** Method Blank **Batch ID:** R373334
**Method:** SW8015C **Analysis Date:** 01/18/2022 10:24 **Prep Date:**
**Lab ID:** MBLK_0117PE148r **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C6 to C10 | ND | 10 | | | | | | | | | |
| Total Purgeable Hydrocarbons | ND | 10 | | | | | | | | | |
| Surr: Trifluorotoluene | 21 | 1.0 | 25 | | 84.0 | 70 | 130 | | | | |

Associated Samples: **B22010979-001G, B22010979-003A**

**Run ID: Run Order:** PE 1_220117A: 19 **SampType:** Laboratory Control Sample **Batch ID:** R373334
**Method:** SW8015C **Analysis Date:** 01/17/2022 22:24 **Prep Date:**
**Lab ID:** LCS_0117PE127r **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C6 to C10 | 152 | 20 | 170 | | 89.0 | 78 | 122 | | | | |
| Total Purgeable Hydrocarbons | 179 | 20 | 200 | | 90.0 | 70 | 130 | | | | |
| Surr: Trifluorotoluene | 23 | 1.0 | 25 | | 91.0 | 70 | 130 | | | | |

Associated Samples: **B22010979-001G, B22010979-003A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** PE 1_220117A: 31 **SampType:** Laboratory Control Sample **Batch ID:** R373334
**Method:** SW8015C **Analysis Date:** 01/18/2022 09:50 **Prep Date:**
**Lab ID:** LCS_0117PE147r **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C6 to C10 | 154 | 20 | 170 | | 91.0 | 78 | 122 | | | | |
| Total Purgeable Hydrocarbons | 182 | 20 | 200 | | 91.0 | 70 | 130 | | | | |
| Surr: Trifluorotoluene | 22 | 1.0 | 25 | | 90.0 | 70 | 130 | | | | |

Associated Samples: **B22010979-001G, B22010979-003A**

**Run ID: Run Order:** PE 1_220117A: 15 **SampType:** Sample Matrix Spike **Batch ID:** R373334
**Method:** SW8015C **Analysis Date:** 01/17/2022 19:33 **Prep Date:**
**Lab ID:** B22010971-001GMS **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C6 to C10 | 156 | 20 | 170 | 0.0 | 92.0 | 78 | 122 | | | | |
| Total Purgeable Hydrocarbons | 186 | 20 | 200 | 0.0 | 93.0 | 70 | 130 | | | | |
| Surr: Trifluorotoluene | 23 | 1.0 | 25 | 0.0 | 93.0 | 70 | 130 | | | | |

Associated Samples: **B22010979-001G, B22010979-003A**

**Run ID: Run Order:** PE 1_220117A: 16 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R373334
**Method:** SW8015C **Analysis Date:** 01/17/2022 20:07 **Prep Date:**
**Lab ID:** B22010971-001GMSD **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C6 to C10 | 161 | 20 | 170 | 0.0 | 95.0 | 78 | 122 | 156 | 2.7 | 20.0 | |
| Total Purgeable Hydrocarbons | 190 | 20 | 200 | 0.0 | 95.0 | 70 | 130 | 186 | 2.6 | 20.0 | |
| Surr: Trifluorotoluene | 23 | 1.0 | 25 | 0.0 | 94.0 | 70 | 130 | 0.0 | | | |

Associated Samples: **B22010979-001G, B22010979-003A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** GCFID-HP4-B_220118A: 5 **SampType:** Method Blank **Batch ID:** 162993
**Method:** SW8015C **Analysis Date:** 01/18/2022 22:02 **Prep Date:** 01/17/2022 13:44
**Lab ID:** MB-162993 **Units:** mg/L **Prep Method:** SW3520C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (C10 to C24) | ND | 0.15 | | | | | | | | | |
| Oil Range Hydrocarbons (C24 to C40) | ND | 0.15 | | | | | | | | | |
| Total Extractable Hydrocarbons | ND | 0.15 | | | | | | | | | |
| Surr: o-Terphenyl | 0.19 | 0.0020 | 0.20 | | 97.0 | 56 | 125 | | | | |
| Surr: n-Triacontane | 0.12 | 0.0020 | 0.10 | | 116.0 | 50 | 150 | | | | |

Associated Samples: **B22010979-001D**

**Run ID: Run Order:** GCFID-HP4-B_220118A: 3 **SampType:** Laboratory Control Sample **Batch ID:** 162993
**Method:** SW8015C **Analysis Date:** 01/18/2022 20:32 **Prep Date:** 01/17/2022 13:44
**Lab ID:** LCS-162993 **Units:** mg/L **Prep Method:** SW3520C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (C10 to C24) | 12 | 0.30 | 15 | | 82.0 | 36 | 132 | | | | |
| Total Extractable Hydrocarbons | 13 | 0.30 | 15 | | 87.0 | 60 | 132 | | | | |
| Surr: o-Terphenyl | 0.18 | 0.0020 | 0.20 | | 89.0 | 56 | 125 | | | | |

Associated Samples: **B22010979-001D**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** GCFID-HP4-B_220118A: 4 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 162993
**Method:** SW8015C **Analysis Date:** 01/18/2022 21:17 **Prep Date:** 01/17/2022 13:45
**Lab ID:** LCSD-162993 **Units:** mg/L **Prep Method:** SW3520C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (C10 to C24) | 13 | 0.30 | 15 | | 87.0 | 36 | 132 | 12 | 6.4 | 20.0 | |
| Total Extractable Hydrocarbons | 14 | 0.30 | 15 | | 93.0 | 60 | 132 | 13 | 6.4 | 20.0 | |
| Surr: o-Terphenyl | 0.19 | 0.0020 | 0.20 | | 93.0 | 56 | 125 | 0.0 | | | |

Associated Samples: **B22010979-001D**

**Run ID: Run Order:** GCFID-HP4-B_220118A: 22 **SampType:** Laboratory Control Sample **Batch ID:** 162993
**Method:** SW8015C **Analysis Date:** 01/19/2022 19:40 **Prep Date:** 01/17/2022 13:45
**Lab ID:** LCS-162993-RRO **Units:** mg/L **Prep Method:** SW3520C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TEH(Oil Range) | 4.8 | 0.30 | 5.0 | | 96.0 | 41 | 113 | | | | |
| Surr: n-Triacontane | 0.12 | 0.0020 | 0.10 | | 119.0 | 50 | 150 | | | | |

Associated Samples: **B22010979-001D**

**Run ID: Run Order:** GCFID-HP4-B_220118A: 23 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 162993
**Method:** SW8015C **Analysis Date:** 01/19/2022 21:09 **Prep Date:** 01/17/2022 13:45
**Lab ID:** LCSD-162993-RRO **Units:** mg/L **Prep Method:** SW3520C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TEH(Oil Range) | 4.5 | 0.30 | 5.0 | | 91.0 | 41 | 113 | 4.8 | 5.9 | 20.0 | |
| Surr: n-Triacontane | 0.11 | 0.0020 | 0.10 | | 110.0 | 50 | 150 | 0.0 | | | |

Associated Samples: **B22010979-001D**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** GCFID-HP4-B_220118A: 7 **SampType:** Sample Matrix Spike **Batch ID:** 162993
**Method:** SW8015C **Analysis Date:** 01/18/2022 23:31 **Prep Date:** 01/17/2022 13:46
**Lab ID:** B22010978-001DMS **Units:** mg/L **Prep Method:** SW3520C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (C10 to C24) | 13 | 0.30 | 15 | 0.10 | 87.0 | 36 | 132 | | | | |
| Total Extractable Hydrocarbons | 14 | 0.30 | 15 | 0.37 | 92.0 | 60 | 132 | | | | |
| Surr: o-Terphenyl | 0.18 | 0.0020 | 0.19 | 0.0 | 93.0 | 56 | 125 | | | | |

Associated Samples: **B22010979-001D**

**Run ID: Run Order:** GCFID-HP4-B_220118A: 9 **SampType:** Sample Matrix Spike **Batch ID:** 162993
**Method:** SW8015C **Analysis Date:** 01/19/2022 01:45 **Prep Date:** 01/17/2022 13:46
**Lab ID:** B22010980-001DMS-RRO **Units:** mg/L **Prep Method:** SW3520C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TEH(Oil Range) | 4.5 | 0.30 | 4.8 | 0.0 | 94.0 | 41 | 113 | | | | |
| Surr: n-Triacontane | 0.11 | 0.0020 | 0.096 | 0.0 | 116.0 | 50 | 150 | | | | |

Associated Samples: **B22010979-001D**

**Run ID: Run Order:** PE 1_220117A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373334
**Method:** SW8015C **Analysis Date:** 01/17/2022 10:24 **Prep Date:**
**Lab ID:** CCV_0117PE106r **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C6 to C10 | 182 | 20 | 168 | | 109.0 | 80 | 120 | | | | |
| Total Purgeable Hydrocarbons | 219 | 20 | 200 | | 109.0 | 80 | 120 | | | | |
| Surr: Trifluorotoluene | 23 | 1.0 | 25 | | 91.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001G, B22010979-003A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** PE 1_220117A: 18 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373334
**Method:** SW8015C **Analysis Date:** 01/17/2022 21:50 **Prep Date:**
**Lab ID:** CCV_0117PE126r **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C6 to C10 | 181 | 20 | 168 | | 108.0 | 80 | 120 | | | | |
| Total Purgeable Hydrocarbons | 217 | 20 | 200 | | 108.0 | 80 | 120 | | | | |
| Surr: Trifluorotoluene | 24 | 1.0 | 25 | | 96.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001G, B22010979-003A**

**Run ID: Run Order:** PE 1_220117A: 30 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373334
**Method:** SW8015C **Analysis Date:** 01/18/2022 09:16 **Prep Date:**
**Lab ID:** CCV_0117PE146r **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C6 to C10 | 169 | 20 | 168 | | 101.0 | 80 | 120 | | | | |
| Total Purgeable Hydrocarbons | 203 | 20 | 200 | | 102.0 | 80 | 120 | | | | |
| Surr: Trifluorotoluene | 23 | 1.0 | 25 | | 94.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001G, B22010979-003A**

**Run ID: Run Order:** GCFID-HP4-B_220118A: 10 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373422
**Method:** SW8015C **Analysis Date:** 01/19/2022 03:14 **Prep Date:**
**Lab ID:** CCV_0118HP419r-W **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TEH(Oil Range) | 4.9 | 0.30 | 5.0 | | 98.0 | 80 | 120 | | | | |
| Surr: n-Triacontane | 0.21 | 0.0020 | 0.20 | | 105.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001D**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** GCFID-HP4-B_220118A: 11 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373422
**Method:** SW8015C **Analysis Date:** 01/19/2022 03:59 **Prep Date:**
**Lab ID:** CCV_0118HP420r **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (C10 to C24) | 14 | 0.30 | 15 | | 92.0 | 80 | 120 | | | | |
| Total Extractable Hydrocarbons | 14 | 0.30 | 15 | | 96.0 | 80 | 120 | | | | |
| Surr: o-Terphenyl | 0.21 | 0.0020 | 0.20 | | 106.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001D**

**Run ID: Run Order:** GCFID-HP4-B_220118A: 17 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373422
**Method:** SW8015C **Analysis Date:** 01/19/2022 13:41 **Prep Date:**
**Lab ID:** CCV_0118HP433r-W **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TEH(Oil Range) | 4.5 | 0.30 | 5.0 | | 91.0 | 80 | 120 | | | | |
| Surr: n-Triacontane | 0.23 | 0.0020 | 0.20 | | 114.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001D**

**Run ID: Run Order:** GCFID-HP4-B_220118A: 18 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373422
**Method:** SW8015C **Analysis Date:** 01/19/2022 14:26 **Prep Date:**
**Lab ID:** CCV_0118HP434r **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (C10 to C24) | 15 | 0.30 | 15 | | 98.0 | 80 | 120 | | | | |
| Total Extractable Hydrocarbons | 15 | 0.30 | 15 | | 102.0 | 80 | 120 | | | | |
| Surr: o-Terphenyl | 0.22 | 0.0020 | 0.20 | | 112.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001D**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** FID-HEADSPACE_220118A: 4 **SampType:** Method Blank **Batch ID:** R373380
**Method:** SW8015M **Analysis Date:** 01/18/2022 09:47 **Prep Date:**
**Lab ID:** MBLK **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methane | ND | 0.0010 | | | 0.0 | | | | | | |

Associated Samples: **B22010979-001I, B22010979-005A**

**Run ID: Run Order:** FID-HEADSPACE_220118A: 2 **SampType:** Laboratory Control Sample **Batch ID:** R373380
**Method:** SW8015M **Analysis Date:** 01/18/2022 08:44 **Prep Date:**
**Lab ID:** LCS **Units:** ppm **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methane | 96 | 2.0 | 100 | | 96.0 | 85 | 115 | | | | |

Associated Samples: **B22010979-001I, B22010979-005A**

**Run ID: Run Order:** FID-HEADSPACE_220118A: 3 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** R373380
**Method:** SW8015M **Analysis Date:** 01/18/2022 08:48 **Prep Date:**
**Lab ID:** LCSD **Units:** ppm **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methane | 98 | 2.0 | 100 | | 98.0 | 85 | 115 | 96 | 2.0 | 20.0 | |

Associated Samples: **B22010979-001I, B22010979-005A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** FID-HEADSPACE_220118A: 18 **SampType:** Sample Duplicate **Batch ID:** R373380
**Method:** SW8015M **Analysis Date:** 01/18/2022 11:23 **Prep Date:**
**Lab ID:** B22010977-001IDUP **Units:** mg/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methane | 0.0098 | 0.0020 | | | 0.0 | | | 0.0099 | 1.8 | 20.0 | |

Associated Samples: **B22010979-001I, B22010979-005A**

**Run ID: Run Order:** FID-HEADSPACE_220118A: 1 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373380
**Method:** SW8015M **Analysis Date:** 01/18/2022 08:39 **Prep Date:**
**Lab ID:** CCV **Units:** ppm **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methane | 97 | 2.0 | 100 | | 97.0 | 85 | 115 | | | | |

Associated Samples: **B22010979-001I, B22010979-005A**

**Run ID: Run Order:** FID-HEADSPACE_220118A: 26 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373380
**Method:** SW8015M **Analysis Date:** 01/18/2022 12:10 **Prep Date:**
**Lab ID:** CCV **Units:** ppm **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methane | 99 | 2.0 | 100 | | 99.0 | 85 | 115 | | | | |

Associated Samples: **B22010979-001I, B22010979-005A**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 4 **SampType:** Method Blank **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 08:33 **Prep Date:** 01/17/2022 10:29
**Lab ID:** MB-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND | 5.0 | | | | | | | | | |
| 1,2-Dichlorobenzene | ND | 5.0 | | | | | | | | | |
| 1,3-Dichlorobenzene | ND | 5.0 | | | | | | | | | |
| 1,4-Dichlorobenzene | ND | 5.0 | | | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 5.0 | | | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 5.0 | | | | | | | | | |
| 2,4-Dichlorophenol | ND | 5.0 | | | | | | | | | |
| 2,4-Dimethylphenol | ND | 5.0 | | | | | | | | | |
| 2,4-Dinitrophenol | ND | 10 | | | | | | | | | |
| 2,4-Dinitrotoluene | ND | 5.0 | | | | | | | | | |
| 2,6-Dinitrotoluene | ND | 5.0 | | | | | | | | | |
| 2-Chloronaphthalene | ND | 5.0 | | | | | | | | | |
| 2-Chlorophenol | ND | 5.0 | | | | | | | | | |
| 2-Nitrophenol | ND | 5.0 | | | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 10 | | | | | | | | | |
| 4,6-Dinitro-2-methylphenol | ND | 10 | | | | | | | | | |
| 4-Bromophenyl phenyl ether | ND | 5.0 | | | | | | | | | |
| 4-Chloro-3-methylphenol | ND | 5.0 | | | | | | | | | |
| 4-Chlorophenol | ND | 5.0 | | | | | | | | | |
| 4-Chlorophenyl phenyl ether | ND | 5.0 | | | | | | | | | |
| 4-Nitrophenol | ND | 10 | | | | | | | | | |
| Azobenzene | ND | 5.0 | | | | | | | | | |
| bis(-2-chloroethoxy)Methane | ND | 5.0 | | | | | | | | | |
| bis(-2-chloroethyl)Ether | ND | 5.0 | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 5.0 | | | | | | | | | |
| bis(2-ethylhexyl)Phthalate | ND | 5.0 | | | | | | | | | |
| Butylbenzylphthalate | ND | 5.0 | | | | | | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 4 **SampType:** Method Blank **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 08:33 **Prep Date:** 01/17/2022 10:29
**Lab ID:** MB-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diethyl phthalate | ND | 5.0 | | | | | | | | | |
| Dimethyl phthalate | ND | 5.0 | | | | | | | | | |
| Di-n-butyl phthalate | ND | 5.0 | | | | | | | | | |
| Di-n-octyl phthalate | ND | 5.0 | | | | | | | | | |
| Hexachlorobenzene | ND | 5.0 | | | | | | | | | |
| Hexachlorobutadiene | ND | 5.0 | | | | | | | | | |
| Hexachlorocyclopentadiene | ND | 5.0 | | | | | | | | | |
| Hexachloroethane | ND | 5.0 | | | | | | | | | |
| Isophorone | ND | 5.0 | | | | | | | | | |
| m+p-Cresols | ND | 5.0 | | | | | | | | | |
| Nitrobenzene | ND | 5.0 | | | | | | | | | |
| n-Nitrosodimethylamine | ND | 5.0 | | | | | | | | | |
| n-Nitroso-di-n-propylamine | ND | 5.0 | | | | | | | | | |
| n-Nitrosodiphenylamine | ND | 10 | | | | | | | | | |
| o-Cresol | ND | 5.0 | | | | | | | | | |
| Pentachlorophenol | ND | 10 | | | | | | | | | |
| Phenol | ND | 5.0 | | | | | | | | | |
| Pyridine | ND | 5.0 | | | | | | | | | |
| Surr: 2,4,6-Tribromophenol | 172 | 5.0 | 200 | | 86.0 | 43 | 140 | | | | |
| Surr: 2-Fluorobiphenyl | 39 | 5.0 | 100 | | 39.0 | 44 | 119 | | | | S |
| Surr: 2-Fluorophenol | 102 | 5.0 | 200 | | 51.0 | 19 | 119 | | | | |
| Surr: Nitrobenzene-d5 | 62 | 5.0 | 100 | | 62.0 | 44 | 120 | | | | |
| Surr: Phenol-d5 | 85 | 5.0 | 200 | | 42.0 | 10 | 65 | | | | |
| Surr: Terphenyl-d14 | 92 | 5.0 | 100 | | 92.0 | 50 | 134 | | | | |

Associated Samples: **B22010979-001C**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 5 **SampType:** Laboratory Control Sample **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 09:05 **Prep Date:** 01/17/2022 10:29
**Lab ID:** LCS-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 65 | 10 | 100 | | 65.0 | 29 | 116 | | | | |
| 1,2-Dichlorobenzene | 56 | 10 | 100 | | 56.0 | 32 | 111 | | | | |
| 1,3-Dichlorobenzene | 50 | 10 | 100 | | 50.0 | 28 | 110 | | | | |
| 1,4-Dichlorobenzene | 54 | 10 | 100 | | 54.0 | 29 | 112 | | | | |
| 2,4,5-Trichlorophenol | 93 | 10 | 100 | | 93.0 | 53 | 123 | | | | |
| 2,4,6-Trichlorophenol | 89 | 10 | 100 | | 89.0 | 50 | 125 | | | | |
| 2,4-Dichlorophenol | 97 | 10 | 100 | | 97.0 | 47 | 121 | | | | |
| 2,4-Dimethylphenol | 67 | 10 | 100 | | 67.0 | 31 | 124 | | | | |
| 2,4-Dinitrophenol | 79 | 10 | 100 | | 79.0 | 23 | 142 | | | | |
| 2,4-Dinitrotoluene | 89 | 10 | 100 | | 89.0 | 57 | 128 | | | | |
| 2,6-Dinitrotoluene | 93 | 10 | 100 | | 93.0 | 50 | 118 | | | | |
| 2-Chloronaphthalene | 71 | 10 | 100 | | 71.0 | 40 | 116 | | | | |
| 2-Chlorophenol | 70 | 10 | 100 | | 70.0 | 38 | 117 | | | | |
| 2-Nitrophenol | 95 | 10 | 100 | | 95.0 | 47 | 123 | | | | |
| 3,3´-Dichlorobenzidine | 80 | 10 | 100 | | 80.0 | 27 | 129 | | | | |
| 4,6-Dinitro-2-methylphenol | 87 | 10 | 100 | | 87.0 | 44 | 137 | | | | |
| 4-Bromophenyl phenyl ether | 96 | 10 | 100 | | 96.0 | 55 | 124 | | | | |
| 4-Chloro-3-methylphenol | 105 | 10 | 100 | | 105.0 | 52 | 119 | | | | |
| 4-Chlorophenol | 86 | 10 | 100 | | 86.0 | 41 | 81 | | | | S |
| 4-Chlorophenyl phenyl ether | 95 | 10 | 100 | | 95.0 | 53 | 121 | | | | |
| 4-Nitrophenol | 40 | 10 | 100 | | 40.0 | 15 | 36 | | | | S |
| Azobenzene | 103 | 10 | 100 | | 103.0 | 61 | 116 | | | | |
| bis(-2-chloroethoxy)Methane | 86 | 10 | 100 | | 86.0 | 48 | 120 | | | | |
| bis(-2-chloroethyl)Ether | 72 | 10 | 100 | | 72.0 | 43 | 118 | | | | |
| bis(2-chloroisopropyl)Ether | 71 | 10 | 100 | | 71.0 | 37 | 130 | | | | |
| bis(2-ethylhexyl)Phthalate | 105 | 10 | 100 | | 105.0 | 55 | 135 | | | | |
| Butylbenzylphthalate | 106 | 10 | 100 | | 106.0 | 53 | 134 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 5 **SampType:** Laboratory Control Sample **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 09:05 **Prep Date:** 01/17/2022 10:29
**Lab ID:** LCS-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diethyl phthalate | 106 | 10 | 100 | | 106.0 | 56 | 125 | | | | |
| Dimethyl phthalate | 103 | 10 | 100 | | 103.0 | 45 | 127 | | | | |
| Di-n-butyl phthalate | 85 | 10 | 100 | | 85.0 | 59 | 127 | | | | |
| Di-n-octyl phthalate | 104 | 10 | 100 | | 104.0 | 51 | 140 | | | | |
| Hexachlorobenzene | 101 | 10 | 100 | | 101.0 | 53 | 125 | | | | |
| Hexachlorobutadiene | 54 | 10 | 100 | | 54.0 | 22 | 124 | | | | |
| Hexachlorocyclopentadiene | 64 | 10 | 100 | | 64.0 | 39 | 91 | | | | |
| Hexachloroethane | 53 | 10 | 100 | | 53.0 | 21 | 115 | | | | |
| Isophorone | 95 | 10 | 100 | | 95.0 | 42 | 124 | | | | |
| m+p-Cresols | 78 | 10 | 100 | | 78.0 | 29 | 110 | | | | |
| Nitrobenzene | 98 | 10 | 100 | | 98.0 | 45 | 121 | | | | |
| n-Nitrosodimethylamine | 46 | 10 | 100 | | 46.0 | 20 | 45 | | | | S |
| n-Nitroso-di-n-propylamine | 95 | 10 | 100 | | 95.0 | 49 | 119 | | | | |
| n-Nitrosodiphenylamine | 112 | 10 | 100 | | 112.0 | 51 | 123 | | | | |
| o-Cresol | 81 | 10 | 100 | | 81.0 | 30 | 117 | | | | |
| Pentachlorophenol | 115 | 10 | 100 | | 115.0 | 35 | 138 | | | | |
| Phenol | 55 | 10 | 100 | | 55.0 | 37 | 75 | | | | |
| Pyridine | 35 | 10 | 100 | | 35.0 | 16 | 45 | | | | |
| Surr: 2,4,6-Tribromophenol | 233 | 10 | 200 | | 116.0 | 43 | 140 | | | | |
| Surr: 2-Fluorobiphenyl | 63 | 10 | 100 | | 63.0 | 44 | 119 | | | | |
| Surr: 2-Fluorophenol | 113 | 10 | 200 | | 56.0 | 19 | 119 | | | | |
| Surr: Nitrobenzene-d5 | 84 | 10 | 100 | | 84.0 | 44 | 120 | | | | |
| Surr: Phenol-d5 | 96 | 10 | 200 | | 48.0 | 10 | 65 | | | | |
| Surr: Terphenyl-d14 | 106 | 10 | 100 | | 106.0 | 50 | 134 | | | | |

Associated Samples: **B22010979-001C**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 6 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 09:38 **Prep Date:** 01/17/2022 10:30
**Lab ID:** LCSD-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 67 | 10 | 100 | | 67.0 | 29 | 116 | 65 | 3.9 | 20.0 | |
| 1,2-Dichlorobenzene | 67 | 10 | 100 | | 67.0 | 32 | 111 | 56 | 18.0 | 20.0 | |
| 1,3-Dichlorobenzene | 63 | 10 | 100 | | 63.0 | 28 | 110 | 50 | 22.0 | 20.0 | R |
| 1,4-Dichlorobenzene | 65 | 10 | 100 | | 65.0 | 29 | 112 | 54 | 19.0 | 20.0 | |
| 2,4,5-Trichlorophenol | 91 | 10 | 100 | | 91.0 | 53 | 123 | 93 | 2.5 | 20.0 | |
| 2,4,6-Trichlorophenol | 93 | 10 | 100 | | 93.0 | 50 | 125 | 89 | 4.4 | 20.0 | |
| 2,4-Dichlorophenol | 88 | 10 | 100 | | 88.0 | 47 | 121 | 97 | 9.1 | 20.0 | |
| 2,4-Dimethylphenol | 56 | 10 | 100 | | 56.0 | 31 | 124 | 67 | 18.0 | 20.0 | |
| 2,4-Dinitrophenol | 74 | 10 | 100 | | 74.0 | 23 | 142 | 79 | 6.7 | 20.0 | |
| 2,4-Dinitrotoluene | 89 | 10 | 100 | | 89.0 | 57 | 128 | 89 | 0.2 | 20.0 | |
| 2,6-Dinitrotoluene | 89 | 10 | 100 | | 89.0 | 50 | 118 | 93 | 4.9 | 20.0 | |
| 2-Chloronaphthalene | 79 | 10 | 100 | | 79.0 | 40 | 116 | 71 | 11.0 | 20.0 | |
| 2-Chlorophenol | 82 | 10 | 100 | | 82.0 | 38 | 117 | 70 | 15.0 | 20.0 | |
| 2-Nitrophenol | 89 | 10 | 100 | | 89.0 | 47 | 123 | 95 | 6.9 | 20.0 | |
| 3,3´-Dichlorobenzidine | 75 | 10 | 100 | | 75.0 | 27 | 129 | 80 | 7.4 | 20.0 | |
| 4,6-Dinitro-2-methylphenol | 75 | 10 | 100 | | 75.0 | 44 | 137 | 87 | 15.0 | 20.0 | |
| 4-Bromophenyl phenyl ether | 86 | 10 | 100 | | 86.0 | 55 | 124 | 96 | 11.0 | 20.0 | |
| 4-Chloro-3-methylphenol | 92 | 10 | 100 | | 92.0 | 52 | 119 | 105 | 13.0 | 20.0 | |
| 4-Chlorophenol | 79 | 10 | 100 | | 79.0 | 41 | 81 | 86 | 8.0 | 20.0 | |
| 4-Chlorophenyl phenyl ether | 86 | 10 | 100 | | 86.0 | 53 | 121 | 95 | 10.0 | 20.0 | |
| 4-Nitrophenol | 50 | 10 | 100 | | 50.0 | 15 | 36 | 40 | 21.0 | 20.0 | SR |
| Azobenzene | 93 | 10 | 100 | | 93.0 | 61 | 116 | 103 | 10.0 | 20.0 | |
| bis(-2-chloroethoxy)Methane | 82 | 10 | 100 | | 82.0 | 48 | 120 | 86 | 4.7 | 20.0 | |
| bis(-2-chloroethyl)Ether | 85 | 10 | 100 | | 85.0 | 43 | 118 | 72 | 17.0 | 20.0 | |
| bis(2-chloroisopropyl)Ether | 69 | 10 | 100 | | 69.0 | 37 | 130 | 71 | 3.5 | 20.0 | |
| bis(2-ethylhexyl)Phthalate | 101 | 10 | 100 | | 101.0 | 55 | 135 | 105 | 3.3 | 20.0 | |
| Butylbenzylphthalate | 102 | 10 | 100 | | 102.0 | 53 | 134 | 106 | 3.2 | 20.0 | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 6 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 09:38 **Prep Date:** 01/17/2022 10:30
**Lab ID:** LCSD-162980 **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diethyl phthalate | 101 | 10 | 100 | | 101.0 | 56 | 125 | 106 | 4.5 | 20.0 | |
| Dimethyl phthalate | 97 | 10 | 100 | | 97.0 | 45 | 127 | 103 | 6.2 | 20.0 | |
| Di-n-butyl phthalate | 98 | 10 | 100 | | 98.0 | 59 | 127 | 85 | 14.0 | 20.0 | |
| Di-n-octyl phthalate | 103 | 10 | 100 | | 103.0 | 51 | 140 | 104 | 0.9 | 20.0 | |
| Hexachlorobenzene | 88 | 10 | 100 | | 88.0 | 53 | 125 | 101 | 14.0 | 20.0 | |
| Hexachlorobutadiene | 57 | 10 | 100 | | 57.0 | 22 | 124 | 54 | 5.1 | 20.0 | |
| Hexachlorocyclopentadiene | 57 | 10 | 100 | | 57.0 | 39 | 91 | 64 | 12.0 | 20.0 | |
| Hexachloroethane | 67 | 10 | 100 | | 67.0 | 21 | 115 | 53 | 23.0 | 20.0 | R |
| Isophorone | 84 | 10 | 100 | | 84.0 | 42 | 124 | 95 | 12.0 | 20.0 | |
| m+p-Cresols | 76 | 10 | 100 | | 76.0 | 29 | 110 | 78 | 3.2 | 20.0 | |
| Nitrobenzene | 94 | 10 | 100 | | 94.0 | 45 | 121 | 98 | 3.4 | 20.0 | |
| n-Nitrosodimethylamine | 39 | 10 | 100 | | 39.0 | 20 | 45 | 46 | 16.0 | 20.0 | |
| n-Nitroso-di-n-propylamine | 90 | 10 | 100 | | 90.0 | 49 | 119 | 95 | 5.4 | 20.0 | |
| n-Nitrosodiphenylamine | 91 | 10 | 100 | | 91.0 | 51 | 123 | 112 | 21.0 | 20.0 | R |
| o-Cresol | 79 | 10 | 100 | | 79.0 | 30 | 117 | 81 | 2.8 | 20.0 | |
| Pentachlorophenol | 103 | 10 | 100 | | 103.0 | 35 | 138 | 115 | 11.0 | 20.0 | |
| Phenol | 57 | 10 | 100 | | 57.0 | 37 | 75 | 55 | 3.4 | 20.0 | |
| Pyridine | 37 | 10 | 100 | | 37.0 | 16 | 45 | 35 | 5.7 | 20.0 | |
| Surr: 2,4,6-Tribromophenol | 193 | 10 | 200 | | 97.0 | 43 | 140 | 0.0 | 0.0 | | |
| Surr: 2-Fluorobiphenyl | 68 | 10 | 100 | | 68.0 | 44 | 119 | 0.0 | 0.0 | | |
| Surr: 2-Fluorophenol | 113 | 10 | 200 | | 56.0 | 19 | 119 | 0.0 | 0.0 | | |
| Surr: Nitrobenzene-d5 | 78 | 10 | 100 | | 78.0 | 44 | 120 | 0.0 | 0.0 | | |
| Surr: Phenol-d5 | 97 | 10 | 200 | | 49.0 | 10 | 65 | 0.0 | 0.0 | | |
| Surr: Terphenyl-d14 | 89 | 10 | 100 | | 89.0 | 50 | 134 | 0.0 | 0.0 | | |

Associated Samples: **B22010979-001C**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 8 **SampType:** Sample Matrix Spike **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 10:42 **Prep Date:** 01/17/2022 10:31
**Lab ID:** B22010872-001HMS **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 51 | 10 | 100 | 0.0 | 51.0 | 29 | 116 | | | | |
| 1,2-Dichlorobenzene | 47 | 10 | 100 | 0.0 | 47.0 | 32 | 111 | | | | |
| 1,3-Dichlorobenzene | 45 | 10 | 100 | 0.0 | 45.0 | 28 | 110 | | | | |
| 1,4-Dichlorobenzene | 46 | 10 | 100 | 0.0 | 46.0 | 29 | 112 | | | | |
| 2,4,5-Trichlorophenol | 69 | 10 | 100 | 0.0 | 69.0 | 53 | 123 | | | | |
| 2,4,6-Trichlorophenol | 69 | 10 | 100 | 0.0 | 69.0 | 50 | 125 | | | | |
| 2,4-Dichlorophenol | 67 | 10 | 100 | 0.0 | 67.0 | 47 | 121 | | | | |
| 2,4-Dimethylphenol | 56 | 10 | 100 | 0.0 | 56.0 | 31 | 124 | | | | |
| 2,4-Dinitrophenol | 56 | 20 | 100 | 0.0 | 56.0 | 23 | 142 | | | | |
| 2,4-Dinitrotoluene | 74 | 10 | 100 | 0.0 | 74.0 | 57 | 128 | | | | |
| 2,6-Dinitrotoluene | 71 | 10 | 100 | 0.0 | 71.0 | 50 | 118 | | | | |
| 2-Chloronaphthalene | 64 | 10 | 100 | 0.0 | 64.0 | 40 | 116 | | | | |
| 2-Chlorophenol | 58 | 10 | 100 | 0.0 | 58.0 | 38 | 117 | | | | |
| 2-Nitrophenol | 63 | 10 | 100 | 0.0 | 63.0 | 47 | 123 | | | | |
| 3,3´-Dichlorobenzidine | 73 | 20 | 100 | 0.0 | 73.0 | 27 | 129 | | | | |
| 4,6-Dinitro-2-methylphenol | 69 | 20 | 100 | 0.0 | 69.0 | 44 | 137 | | | | |
| 4-Bromophenyl phenyl ether | 81 | 10 | 100 | 0.0 | 81.0 | 55 | 124 | | | | |
| 4-Chloro-3-methylphenol | 82 | 10 | 100 | 0.0 | 82.0 | 52 | 119 | | | | |
| 4-Chlorophenol | 64 | 10 | 100 | 0.0 | 64.0 | 41 | 81 | | | | |
| 4-Chlorophenyl phenyl ether | 79 | 10 | 100 | 0.0 | 79.0 | 53 | 121 | | | | |
| 4-Nitrophenol | 39 | 20 | 100 | 0.0 | 39.0 | 15 | 36 | | | | S |
| Azobenzene | 87 | 10 | 100 | 0.0 | 87.0 | 61 | 116 | | | | |
| bis(-2-chloroethoxy)Methane | 70 | 10 | 100 | 0.0 | 70.0 | 48 | 120 | | | | |
| bis(-2-chloroethyl)Ether | 68 | 10 | 100 | 0.0 | 68.0 | 43 | 118 | | | | |
| bis(2-chloroisopropyl)Ether | 54 | 10 | 100 | 0.0 | 54.0 | 37 | 130 | | | | |
| bis(2-ethylhexyl)Phthalate | 94 | 10 | 100 | 0.0 | 94.0 | 55 | 135 | | | | |
| Butylbenzylphthalate | 94 | 10 | 100 | 0.0 | 94.0 | 53 | 134 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 8 **SampType:** Sample Matrix Spike **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 10:42 **Prep Date:** 01/17/2022 10:31
**Lab ID:** B22010872-001HMS **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diethyl phthalate | 85 | 10 | 100 | 0.0 | 85.0 | 56 | 125 | | | | |
| Dimethyl phthalate | 86 | 10 | 100 | 0.0 | 86.0 | 45 | 127 | | | | |
| Di-n-butyl phthalate | 96 | 10 | 100 | 0.0 | 96.0 | 59 | 127 | | | | |
| Di-n-octyl phthalate | 93 | 10 | 100 | 0.0 | 93.0 | 51 | 140 | | | | |
| Hexachlorobenzene | 77 | 10 | 100 | 0.0 | 77.0 | 53 | 125 | | | | |
| Hexachlorobutadiene | 42 | 10 | 100 | 0.0 | 42.0 | 22 | 124 | | | | |
| Hexachlorocyclopentadiene | 42 | 10 | 100 | 0.0 | 42.0 | 39 | 91 | | | | |
| Hexachloroethane | 45 | 10 | 100 | 0.0 | 45.0 | 21 | 115 | | | | |
| Isophorone | 64 | 10 | 100 | 0.0 | 64.0 | 42 | 124 | | | | |
| m+p-Cresols | 62 | 10 | 100 | 0.0 | 62.0 | 29 | 110 | | | | |
| Nitrobenzene | 61 | 10 | 100 | 0.0 | 61.0 | 45 | 121 | | | | |
| n-Nitrosodimethylamine | 27 | 10 | 100 | 0.0 | 27.0 | 20 | 45 | | | | |
| n-Nitroso-di-n-propylamine | 75 | 10 | 100 | 0.0 | 75.0 | 49 | 119 | | | | |
| n-Nitrosodiphenylamine | 92 | 20 | 100 | 0.0 | 92.0 | 51 | 123 | | | | |
| o-Cresol | 64 | 10 | 100 | 0.0 | 64.0 | 30 | 117 | | | | |
| Pentachlorophenol | 84 | 20 | 100 | 0.0 | 84.0 | 35 | 138 | | | | |
| Phenol | 42 | 10 | 100 | 0.0 | 42.0 | 37 | 75 | | | | |
| Pyridine | 23 | 10 | 100 | 0.0 | 23.0 | 16 | 45 | | | | |
| Surr: 2,4,6-Tribromophenol | 167 | 10 | 200 | 0.0 | 84.0 | 43 | 140 | | | | |
| Surr: 2-Fluorobiphenyl | 67 | 10 | 100 | 0.0 | 67.0 | 44 | 119 | | | | |
| Surr: 2-Fluorophenol | 72 | 10 | 200 | 0.0 | 36.0 | 19 | 119 | | | | |
| Surr: Nitrobenzene-d5 | 65 | 10 | 100 | 0.0 | 65.0 | 44 | 120 | | | | |
| Surr: Phenol-d5 | 77 | 10 | 200 | 0.0 | 39.0 | 10 | 65 | | | | |
| Surr: Terphenyl-d14 | 95 | 10 | 100 | 0.0 | 95.0 | 50 | 134 | | | | |

Associated Samples: **B22010979-001C**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 10 **SampType:** Sample Matrix Spike **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 11:46 **Prep Date:** 01/17/2022 10:34
**Lab ID:** B22010971-001CMS **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 71 | 10 | 101 | 0.0 | 71.0 | 29 | 116 | | | | |
| 1,2-Dichlorobenzene | 74 | 10 | 101 | 0.0 | 73.0 | 32 | 111 | | | | |
| 1,3-Dichlorobenzene | 68 | 10 | 101 | 0.0 | 68.0 | 28 | 110 | | | | |
| 1,4-Dichlorobenzene | 68 | 10 | 101 | 0.0 | 68.0 | 29 | 112 | | | | |
| 2,4,5-Trichlorophenol | 88 | 10 | 101 | 0.0 | 87.0 | 53 | 123 | | | | |
| 2,4,6-Trichlorophenol | 87 | 10 | 101 | 0.0 | 86.0 | 50 | 125 | | | | |
| 2,4-Dichlorophenol | 80 | 10 | 101 | 0.0 | 80.0 | 47 | 121 | | | | |
| 2,4-Dimethylphenol | 71 | 10 | 101 | 0.0 | 70.0 | 31 | 124 | | | | |
| 2,4-Dinitrophenol | 74 | 10 | 101 | 0.0 | 74.0 | 23 | 142 | | | | |
| 2,4-Dinitrotoluene | 92 | 10 | 101 | 0.0 | 91.0 | 57 | 128 | | | | |
| 2,6-Dinitrotoluene | 83 | 10 | 101 | 0.0 | 82.0 | 50 | 118 | | | | |
| 2-Chloronaphthalene | 83 | 10 | 101 | 0.0 | 82.0 | 40 | 116 | | | | |
| 2-Chlorophenol | 72 | 10 | 101 | 0.0 | 71.0 | 38 | 117 | | | | |
| 2-Nitrophenol | 84 | 10 | 101 | 0.0 | 83.0 | 47 | 123 | | | | |
| 3,3´-Dichlorobenzidine | 76 | 10 | 101 | 0.0 | 75.0 | 27 | 129 | | | | |
| 4,6-Dinitro-2-methylphenol | 77 | 10 | 101 | 0.0 | 76.0 | 44 | 137 | | | | |
| 4-Bromophenyl phenyl ether | 83 | 10 | 101 | 0.0 | 82.0 | 55 | 124 | | | | |
| 4-Chloro-3-methylphenol | 90 | 10 | 101 | 0.0 | 89.0 | 52 | 119 | | | | |
| 4-Chlorophenol | 64 | 10 | 101 | 0.0 | 63.0 | 41 | 81 | | | | |
| 4-Chlorophenyl phenyl ether | 86 | 10 | 101 | 0.0 | 86.0 | 53 | 121 | | | | |
| 4-Nitrophenol | 45 | 10 | 101 | 0.0 | 45.0 | 15 | 36 | | | | S |
| Azobenzene | 93 | 10 | 101 | 0.0 | 92.0 | 61 | 116 | | | | |
| bis(-2-chloroethoxy)Methane | 80 | 10 | 101 | 0.0 | 79.0 | 48 | 120 | | | | |
| bis(-2-chloroethyl)Ether | 86 | 10 | 101 | 0.0 | 85.0 | 43 | 118 | | | | |
| bis(2-chloroisopropyl)Ether | 73 | 10 | 101 | 0.0 | 72.0 | 37 | 130 | | | | |
| bis(2-ethylhexyl)Phthalate | 99 | 10 | 101 | 0.0 | 98.0 | 55 | 135 | | | | |
| Butylbenzylphthalate | 102 | 10 | 101 | 0.0 | 101.0 | 53 | 134 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 10 **SampType:** Sample Matrix Spike **Batch ID:** 162980
**Method:** SW8270C **Analysis Date:** 01/29/2022 11:46 **Prep Date:** 01/17/2022 10:34
**Lab ID:** B22010971-001CMS **Units:** ug/L **Prep Method:** SW3510C

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diethyl phthalate | 101 | 10 | 101 | 0.0 | 100.0 | 56 | 125 | | | | |
| Dimethyl phthalate | 96 | 10 | 101 | 0.0 | 96.0 | 45 | 127 | | | | |
| Di-n-butyl phthalate | 99 | 10 | 101 | 0.0 | 98.0 | 59 | 127 | | | | |
| Di-n-octyl phthalate | 103 | 10 | 101 | 0.0 | 102.0 | 51 | 140 | | | | |
| Hexachlorobenzene | 81 | 10 | 101 | 0.0 | 80.0 | 53 | 125 | | | | |
| Hexachlorobutadiene | 65 | 10 | 101 | 0.0 | 64.0 | 22 | 124 | | | | |
| Hexachlorocyclopentadiene | 58 | 10 | 101 | 0.0 | 57.0 | 39 | 91 | | | | |
| Hexachloroethane | 71 | 10 | 101 | 0.0 | 70.0 | 21 | 115 | | | | |
| Isophorone | 84 | 10 | 101 | 0.0 | 83.0 | 42 | 124 | | | | |
| m+p-Cresols | 75 | 10 | 101 | 0.0 | 74.0 | 29 | 110 | | | | |
| Nitrobenzene | 97 | 10 | 101 | 0.0 | 96.0 | 45 | 121 | | | | |
| n-Nitrosodimethylamine | 42 | 10 | 101 | 0.0 | 42.0 | 20 | 45 | | | | |
| n-Nitroso-di-n-propylamine | 92 | 10 | 101 | 0.0 | 92.0 | 49 | 119 | | | | |
| n-Nitrosodiphenylamine | 92 | 10 | 101 | 0.0 | 91.0 | 51 | 123 | | | | |
| o-Cresol | 81 | 10 | 101 | 0.0 | 80.0 | 30 | 117 | | | | |
| Pentachlorophenol | 106 | 10 | 101 | 0.0 | 105.0 | 35 | 138 | | | | |
| Phenol | 45 | 10 | 101 | 0.0 | 45.0 | 37 | 75 | | | | |
| Pyridine | 31 | 10 | 101 | 0.0 | 31.0 | 16 | 45 | | | | |
| Surr: 2,4,6-Tribromophenol | 205 | 10 | 202 | 0.0 | 102.0 | 43 | 140 | | | | |
| Surr: 2-Fluorobiphenyl | 70 | 10 | 101 | 0.0 | 70.0 | 44 | 119 | | | | |
| Surr: 2-Fluorophenol | 84 | 10 | 202 | 0.0 | 42.0 | 19 | 119 | | | | |
| Surr: Nitrobenzene-d5 | 78 | 10 | 101 | 0.0 | 78.0 | 44 | 120 | | | | |
| Surr: Phenol-d5 | 84 | 10 | 202 | 0.0 | 42.0 | 10 | 65 | | | | |
| Surr: Terphenyl-d14 | 90 | 10 | 101 | 0.0 | 89.0 | 50 | 134 | | | | |

Associated Samples: **B22010979-001C**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373960
**Method:** SW8270C **Analysis Date:** 01/29/2022 07:29 **Prep Date:**
**Lab ID:** 28-Jan-22_CCV_27 **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 73 | 10 | 75 | | 98.0 | 80 | 120 | | | | |
| 1,2-Dichlorobenzene | 84 | 10 | 75 | | 112.0 | 80 | 120 | | | | |
| 1,3-Dichlorobenzene | 83 | 10 | 75 | | 111.0 | 80 | 120 | | | | |
| 1,4-Dichlorobenzene | 77 | 10 | 75 | | 103.0 | 80 | 120 | | | | |
| 2,4,5-Trichlorophenol | 78 | 10 | 75 | | 104.0 | 80 | 120 | | | | |
| 2,4,6-Trichlorophenol | 77 | 10 | 75 | | 103.0 | 80 | 120 | | | | |
| 2,4-Dichlorophenol | 79 | 10 | 75 | | 105.0 | 80 | 120 | | | | |
| 2,4-Dimethylphenol | 79 | 10 | 75 | | 106.0 | 80 | 120 | | | | |
| 2,4-Dinitrophenol | 61 | 10 | 75 | | 81.0 | 80 | 120 | | | | |
| 2,4-Dinitrotoluene | 77 | 10 | 75 | | 103.0 | 80 | 120 | | | | |
| 2,6-Dinitrotoluene | 77 | 10 | 75 | | 103.0 | 80 | 120 | | | | |
| 2-Chloronaphthalene | 71 | 10 | 75 | | 94.0 | 80 | 120 | | | | |
| 2-Chlorophenol | 85 | 10 | 75 | | 114.0 | 80 | 120 | | | | |
| 2-Nitrophenol | 74 | 10 | 75 | | 99.0 | 80 | 120 | | | | |
| 3,3´-Dichlorobenzidine | 76 | 10 | 75 | | 101.0 | 80 | 120 | | | | |
| 4,6-Dinitro-2-methylphenol | 70 | 10 | 75 | | 93.0 | 80 | 120 | | | | |
| 4-Bromophenyl phenyl ether | 72 | 10 | 75 | | 96.0 | 80 | 120 | | | | |
| 4-Chloro-3-methylphenol | 74 | 10 | 75 | | 99.0 | 80 | 120 | | | | |
| 4-Chlorophenol | 80 | 10 | 75 | | 106.0 | 80 | 120 | | | | |
| 4-Chlorophenyl phenyl ether | 73 | 10 | 75 | | 97.0 | 80 | 120 | | | | |
| 4-Nitrophenol | 82 | 10 | 75 | | 109.0 | 80 | 120 | | | | |
| Azobenzene | 79 | 10 | 75 | | 105.0 | 80 | 120 | | | | |
| bis(-2-chloroethoxy)Methane | 73 | 10 | 75 | | 97.0 | 80 | 120 | | | | |
| bis(-2-chloroethyl)Ether | 84 | 10 | 75 | | 112.0 | 80 | 120 | | | | |
| bis(2-chloroisopropyl)Ether | 83 | 10 | 75 | | 111.0 | 80 | 120 | | | | |
| bis(2-ethylhexyl)Phthalate | 77 | 10 | 75 | | 103.0 | 80 | 120 | | | | |
| Butylbenzylphthalate | 78 | 10 | 75 | | 104.0 | 80 | 120 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373960
**Method:** SW8270C **Analysis Date:** 01/29/2022 07:29 **Prep Date:**
**Lab ID:** 28-Jan-22_CCV_27 **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diethyl phthalate | 84 | 10 | 75 | | 112.0 | 80 | 120 | | | | |
| Dimethyl phthalate | 70 | 10 | 75 | | 93.0 | 80 | 120 | | | | |
| Di-n-butyl phthalate | 76 | 10 | 75 | | 102.0 | 80 | 120 | | | | |
| Di-n-octyl phthalate | 79 | 10 | 75 | | 105.0 | 80 | 120 | | | | |
| Hexachlorobenzene | 71 | 10 | 75 | | 95.0 | 80 | 120 | | | | |
| Hexachlorobutadiene | 75 | 10 | 75 | | 100.0 | 80 | 120 | | | | |
| Hexachlorocyclopentadiene | 66 | 10 | 75 | | 88.0 | 80 | 120 | | | | |
| Hexachloroethane | 99 | 10 | 75 | | 131.0 | 80 | 120 | | | | S |
| Isophorone | 76 | 10 | 75 | | 101.0 | 80 | 120 | | | | |
| m+p-Cresols | 75 | 10 | 75 | | 101.0 | 80 | 120 | | | | |
| Nitrobenzene | 94 | 10 | 75 | | 125.0 | 80 | 120 | | | | S |
| n-Nitrosodimethylamine | 60 | 10 | 75 | | 80.0 | 80 | 120 | | | | |
| n-Nitroso-di-n-propylamine | 75 | 10 | 75 | | 99.0 | 80 | 120 | | | | |
| n-Nitrosodiphenylamine | 73 | 10 | 75 | | 97.0 | 80 | 120 | | | | |
| o-Cresol | 86 | 10 | 75 | | 115.0 | 80 | 120 | | | | |
| Pentachlorophenol | 82 | 10 | 75 | | 109.0 | 80 | 120 | | | | |
| Phenol | 79 | 10 | 75 | | 105.0 | 80 | 120 | | | | |
| Pyridine | 61 | 10 | 75 | | 81.0 | 80 | 120 | | | | |
| Surr: 2,4,6-Tribromophenol | 72 | 10 | 75 | | 96.0 | 80 | 120 | | | | |
| Surr: 2-Fluorobiphenyl | 69 | 10 | 75 | | 92.0 | 80 | 120 | | | | |
| Surr: 2-Fluorophenol | 85 | 10 | 75 | | 113.0 | 80 | 120 | | | | |
| Surr: Nitrobenzene-d5 | 87 | 10 | 75 | | 116.0 | 80 | 120 | | | | |
| Surr: Phenol-d5 | 86 | 10 | 75 | | 115.0 | 80 | 120 | | | | |
| Surr: Terphenyl-d14 | 70 | 10 | 75 | | 94.0 | 80 | 120 | | | | |

Associated Samples: **B22010979-001C**

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 20 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373960
**Method:** SW8270C **Analysis Date:** 01/29/2022 17:08 **Prep Date:**
**Lab ID:** 28-Jan-22_CCV_45 **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 71 | 10 | 75 | | 95.0 | 50 | 150 | | | | |
| 1,2-Dichlorobenzene | 75 | 10 | 75 | | 101.0 | 50 | 150 | | | | |
| 1,3-Dichlorobenzene | 73 | 10 | 75 | | 98.0 | 50 | 150 | | | | |
| 1,4-Dichlorobenzene | 75 | 10 | 75 | | 99.0 | 50 | 150 | | | | |
| 2,4,5-Trichlorophenol | 76 | 10 | 75 | | 102.0 | 50 | 150 | | | | |
| 2,4,6-Trichlorophenol | 71 | 10 | 75 | | 95.0 | 50 | 150 | | | | |
| 2,4-Dichlorophenol | 72 | 10 | 75 | | 96.0 | 50 | 150 | | | | |
| 2,4-Dimethylphenol | 73 | 10 | 75 | | 97.0 | 50 | 150 | | | | |
| 2,4-Dinitrophenol | 62 | 10 | 75 | | 82.0 | 50 | 150 | | | | |
| 2,4-Dinitrotoluene | 69 | 10 | 75 | | 92.0 | 50 | 150 | | | | |
| 2,6-Dinitrotoluene | 73 | 10 | 75 | | 97.0 | 50 | 150 | | | | |
| 2-Chloronaphthalene | 72 | 10 | 75 | | 97.0 | 50 | 150 | | | | |
| 2-Chlorophenol | 75 | 10 | 75 | | 99.0 | 50 | 150 | | | | |
| 2-Nitrophenol | 71 | 10 | 75 | | 95.0 | 50 | 150 | | | | |
| 3,3´-Dichlorobenzidine | 77 | 10 | 75 | | 103.0 | 50 | 150 | | | | |
| 4,6-Dinitro-2-methylphenol | 68 | 10 | 75 | | 90.0 | 50 | 150 | | | | |
| 4-Bromophenyl phenyl ether | 71 | 10 | 75 | | 95.0 | 50 | 150 | | | | |
| 4-Chloro-3-methylphenol | 81 | 10 | 75 | | 108.0 | 50 | 150 | | | | |
| 4-Chlorophenol | 75 | 10 | 75 | | 100.0 | 50 | 150 | | | | |
| 4-Chlorophenyl phenyl ether | 68 | 10 | 75 | | 90.0 | 50 | 150 | | | | |
| 4-Nitrophenol | 79 | 10 | 75 | | 105.0 | 50 | 150 | | | | |
| Azobenzene | 86 | 10 | 75 | | 114.0 | 50 | 150 | | | | |
| bis(-2-chloroethoxy)Methane | 72 | 10 | 75 | | 95.0 | 50 | 150 | | | | |
| bis(-2-chloroethyl)Ether | 76 | 10 | 75 | | 101.0 | 50 | 150 | | | | |
| bis(2-chloroisopropyl)Ether | 77 | 10 | 75 | | 102.0 | 50 | 150 | | | | |
| bis(2-ethylhexyl)Phthalate | 77 | 10 | 75 | | 102.0 | 50 | 150 | | | | |
| Butylbenzylphthalate | 78 | 10 | 75 | | 104.0 | 50 | 150 | | | | |

# Analytical QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

**Run ID: Run Order:** SV5973N.I_220128C: 20 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R373960
**Method:** SW8270C **Analysis Date:** 01/29/2022 17:08 **Prep Date:**
**Lab ID:** 28-Jan-22_CCV_45 **Units:** ug/L **Prep Method:**

| Analytes | Result | LOQ | Spk value | Spk RefVal | %REC | LowLimit | HighLimit | RPD RefVal | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diethyl phthalate | 77 | 10 | 75 | | 102.0 | 50 | 150 | | | | |
| Dimethyl phthalate | 72 | 10 | 75 | | 96.0 | 50 | 150 | | | | |
| Di-n-butyl phthalate | 79 | 10 | 75 | | 105.0 | 50 | 150 | | | | |
| Di-n-octyl phthalate | 82 | 10 | 75 | | 110.0 | 50 | 150 | | | | |
| Hexachlorobenzene | 72 | 10 | 75 | | 97.0 | 50 | 150 | | | | |
| Hexachlorobutadiene | 69 | 10 | 75 | | 92.0 | 50 | 150 | | | | |
| Hexachlorocyclopentadiene | 63 | 10 | 75 | | 83.0 | 50 | 150 | | | | |
| Hexachloroethane | 83 | 10 | 75 | | 111.0 | 50 | 150 | | | | |
| Isophorone | 77 | 10 | 75 | | 102.0 | 50 | 150 | | | | |
| m+p-Cresols | 80 | 10 | 75 | | 106.0 | 50 | 150 | | | | |
| Nitrobenzene | 81 | 10 | 75 | | 108.0 | 50 | 150 | | | | |
| n-Nitrosodimethylamine | 66 | 10 | 75 | | 88.0 | 50 | 150 | | | | |
| n-Nitroso-di-n-propylamine | 76 | 10 | 75 | | 101.0 | 50 | 150 | | | | |
| n-Nitrosodiphenylamine | 78 | 10 | 75 | | 105.0 | 50 | 150 | | | | |
| o-Cresol | 75 | 10 | 75 | | 100.0 | 50 | 150 | | | | |
| Pentachlorophenol | 79 | 10 | 75 | | 105.0 | 50 | 150 | | | | |
| Phenol | 75 | 10 | 75 | | 100.0 | 50 | 150 | | | | |
| Pyridine | 69 | 10 | 75 | | 92.0 | 50 | 150 | | | | |
| Surr: 2,4,6-Tribromophenol | 76 | 10 | 75 | | 102.0 | 50 | 150 | | | | |
| Surr: 2-Fluorobiphenyl | 70 | 10 | 75 | | 93.0 | 50 | 150 | | | | |
| Surr: 2-Fluorophenol | 74 | 10 | 75 | | 99.0 | 50 | 150 | | | | |
| Surr: Nitrobenzene-d5 | 75 | 10 | 75 | | 100.0 | 50 | 150 | | | | |
| Surr: Phenol-d5 | 83 | 10 | 75 | | 110.0 | 50 | 150 | | | | |
| Surr: Terphenyl-d14 | 73 | 10 | 75 | | 97.0 | 50 | 150 | | | | |

Associated Samples: **B22010979-001C**

# Analytical QC Exceptions Report

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979
**Project:** CV18F0126, 60571032.02.46.01

**Revised Date:** 03/11/2022
**Report Date:** 02/28/2022

| Analysis Method | Analysis | Batch ID | Associated Samples | Sample Type | Lab ID | Analysis Date | Analysis Time | Analyte | %REC | Low Limit | High Limit | % RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW8260B | 8260-Volatile Organic Compounds QC Samples | R373592 | 001F, 002A | MS-DOD | B22010977-001FMS | 1/20/2022 | 19:35 | Surr: Toluene-d8 | 85.0 | 89 | 112 | | | S |
| | | | | | | | | 1,2-Dichloropropane | 75.0 | 78 | 122 | | | S |
| | | | | MSD-DOD | B22010977-001FMSD | 1/20/2022 | 20:02 | 1,2-Dichloropropane | 107.0 | 78 | 122 | 34 | 20.0 | R |
| | | | | | | | | Bromodichloromethane | 108.0 | 79 | 125 | 26 | 20.0 | R |
| | | | | | | | | cis-1,3-Dichloropropene | 99.0 | 75 | 124 | 26 | 20.0 | R |
| | | | | | | | | Dibromomethane | 108.0 | 79 | 123 | 30 | 20.0 | R |
| | | | | | | | | Toluene | 110.0 | 80 | 121 | 26 | 20.0 | R |
| | | | | | | | | Trichloroethene | 106.0 | 79 | 123 | 27 | 20.0 | R |
| SW8270C | Semi-Volatile Organic Compounds, Extended List | 162980 | 001C | MBLK | MB-162980 | 1/29/2022 | 08:33 | Surr: 2-Fluorobiphenyl | 39.0 | 44 | 119 | | | S |
| | | | | LCS-DOD | LCS-162980 | 1/29/2022 | 09:05 | 4-Chlorophenol | 86.0 | 41 | 81 | | | S |
| | | | | | | | | 4-Nitrophenol | 40.0 | 15 | 36 | | | S |
| | | | | | | | | n-Nitrosodimethylamine | 46.0 | 20 | 45 | | | S |
| | | | | LCSD-DOD | LCSD-162980 | 1/29/2022 | 09:38 | 1,3-Dichlorobenzene | 63.0 | 28 | 110 | 22 | 20.0 | R |
| | | | | | | | | 4-Nitrophenol | 50.0 | 15 | 36 | 21 | 20.0 | SR |
| | | | | | | | | Hexachloroethane | 67.0 | 21 | 115 | 23 | 20.0 | R |
| | | | | | | | | n-Nitrosodiphenylamine | 91.0 | 51 | 123 | 21 | 20.0 | R |
| | | | | MS-DOD | B22010872-001HMS | 1/29/2022 | 10:42 | 4-Nitrophenol | 39.0 | 15 | 36 | | | S |
| | | | | MS-DOD | B22010971-001CMS | 1/29/2022 | 11:46 | 4-Nitrophenol | 45.0 | 15 | 36 | | | S |
| | | R373960 | 001C | CCV | 28-Jan-22_CCV_27 | 1/29/2022 | 07:29 | Hexachloroethane | 131.0 | 80 | 120 | | | S |
| | | | | | | | | Nitrobenzene | 125.0 | 80 | 120 | | | S |

# Preparation and Analysis Dates Report

**Work Order:** B22010979
**Client:** AECOM - Honolulu
**Project Name:** CV18F0126, 60571032.02.46.01

**Date Revised:** 3/11/2022
**Report Date:** 2/28/2022

| Lab ID | Client Sample ID | Collection Date | Matrix | Test Name | TCLP Date | Prep Method | Prep Date | Prep Batch | Analysis Method | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|---|
| 001B | ERH2402 (OWDFMW07A) | 01/13/2022 17:00 | Ground Water | Metals by ICP-MS, Total | | SW3010A | 01/17/2022 13:38 | 162992 | SW6020 | 01/19/2022 09:11 |
| 001C | ERH2402 (OWDFMW07A) | 01/13/2022 17:00 | Ground Water | Low Level PAH by 8270C SIM | | SW3510C | 01/17/2022 10:32 | 162980 | SW8270CSIM | 01/25/2022 21:22 |
| | | | | Semi-Volatile Organic Compounds, Extended List | | SW3510C | 01/17/2022 10:32 | 162980 | SW8270C | 01/29/2022 16:04 |
| 001D | ERH2402 (OWDFMW07A) | 01/13/2022 17:00 | Ground Water | Diesel Range Organics | | SW3520C | 01/17/2022 13:47 | 162993 | SW8015C | 01/19/2022 09:58 |
| 001H | ERH2402 (OWDFMW07A) | 01/13/2022 17:00 | Ground Water | EDB in Water by ECD | | SW8011 | 01/18/2022 09:45 | 163023 | SW8011 | 01/19/2022 23:09 |
| 004A | ERH2401 (Trip Blank) 14653 | 01/13/2022 17:00 | Trip Blank | EDB in Water by ECD | | SW8011 | 01/18/2022 09:45 | 163023 | SW8011 | 01/19/2022 23:28 |

# Chemical Abstracts Service (CAS) Registry Numbers

Prepared by Billings, MT Branch

**Client:** AECOM - Honolulu
**Workorder:** B22010979 **Revised Date:** 03/11/2022
**Project:** CV18F0126, 60571032.02.46.01 **Report Date:** 02/28/2022

| Analyses | CAS No |
|---|---|
| **LOW LEVEL PAH BY 8270C SIM** | |
| 1-Methylnaphthalene | 90-12-0 |
| 2-Methylnaphthalene | 91-57-6 |
| Acenaphthene | 83-32-9 |
| Acenaphthylene | 208-96-8 |
| Anthracene | 120-12-7 |
| Benzo(a)anthracene | 56-55-3 |
| Benzo(a)pyrene | 50-32-8 |
| Benzo(b)fluoranthene | 205-99-2 |
| Benzo(g,h,i)perylene | 191-24-2 |
| Benzo(k)fluoranthene | 207-08-9 |
| Chrysene | 218-01-9 |
| Dibenzo(a,h)anthracene | 53-70-3 |
| Fluoranthene | 206-44-0 |
| Fluorene | 86-73-7 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 |
| Naphthalene | 91-20-3 |
| Phenanthrene | 85-01-8 |
| Pyrene | 129-00-0 |
| **AGGREGATE ORGANICS** | |
| Organic Carbon, Total (TOC) | 7440-44-0 |
| **METALS, TOTAL** | |
| Lead | 7439-92-1 |
| **METALS, DISSOLVED** | |
| Lead | 7439-92-1 |
| **VOLATILE ORGANIC COMPOUNDS** | |
| Benzene | 71-43-2 |
| Bromobenzene | 108-86-1 |
| Bromochloromethane | 74-97-5 |
| Bromodichloromethane | 75-27-4 |
| Bromoform | 75-25-2 |
| Carbon tetrachloride | 56-23-5 |
| Chlorobenzene | 108-90-7 |
| Chlorodibromomethane | 124-48-1 |
| Chloroethane | 75-00-3 |
| Chloroform | 67-66-3 |
| Chloromethane | 74-87-3 |
| 1,2-Dibromoethane | 106-93-4 |

| | |
|---|---|
| 2-Chlorotoluene | 95-49-8 |
| 4-Chlorotoluene | 106-43-4 |
| Dibromomethane | 74-95-3 |
| 1,2-Dichlorobenzene | 95-50-1 |
| 1,3-Dichlorobenzene | 541-73-1 |
| 1,4-Dichlorobenzene | 106-46-7 |
| Dichlorodifluoromethane | 75-71-8 |
| 1,1-Dichloroethane | 75-34-3 |
| 1,2-Dichloroethane | 107-06-2 |
| 1,1-Dichloroethene | 75-35-4 |
| cis-1,2-Dichloroethene | 156-59-2 |
| trans-1,2-Dichloroethene | 156-60-5 |
| 1,2-Dichloropropane | 78-87-5 |
| 1,3-Dichloropropane | 142-28-9 |
| 2,2-Dichloropropane | 594-20-7 |
| 1,1-Dichloropropene | 563-58-6 |
| cis-1,3-Dichloropropene | 10061-01-5 |
| trans-1,3-Dichloropropene | 10061-02-6 |
| Ethylbenzene | 100-41-4 |
| Methyl ethyl ketone | 78-93-3 |
| Methyl tert-butyl ether (MTBE) | 1634-04-4 |
| Methylene chloride | 75-09-2 |
| Styrene | 100-42-5 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 |
| Tetrachloroethene | 127-18-4 |
| Toluene | 108-88-3 |
| 1,1,1-Trichloroethane | 71-55-6 |
| 1,1,2-Trichloroethane | 79-00-5 |
| Trichloroethene | 79-01-6 |
| Trichlorofluoromethane | 75-69-4 |
| 1,2,3-Trichloropropane | 96-18-4 |
| Vinyl chloride | 75-01-4 |
| m+p-Xylenes | 179601-23-1 |
| o-Xylene | 95-47-6 |
| Xylenes, Total | 1330-20-7 |

**VOCS BY MICROEXTRACTION-ECD**

| | |
|---|---|
| 1,2-Dibromoethane | 106-93-4 |

**PETROLEUM HYDROCARBONS-VOLATILE**

| | |
|---|---|
| C6 to C10 | |
| Total Purgeable Hydrocarbons | |

**PETROLEUM HYDROCARBONS-SEMI-VOLATILE**

| | |
|---|---|
| Diesel Range Organics (C10 to C24) | |
| Oil Range Hydrocarbons (C24 to C40) | |
| Total Extractable Hydrocarbons | |

**ORGANIC CHARACTERISTICS**

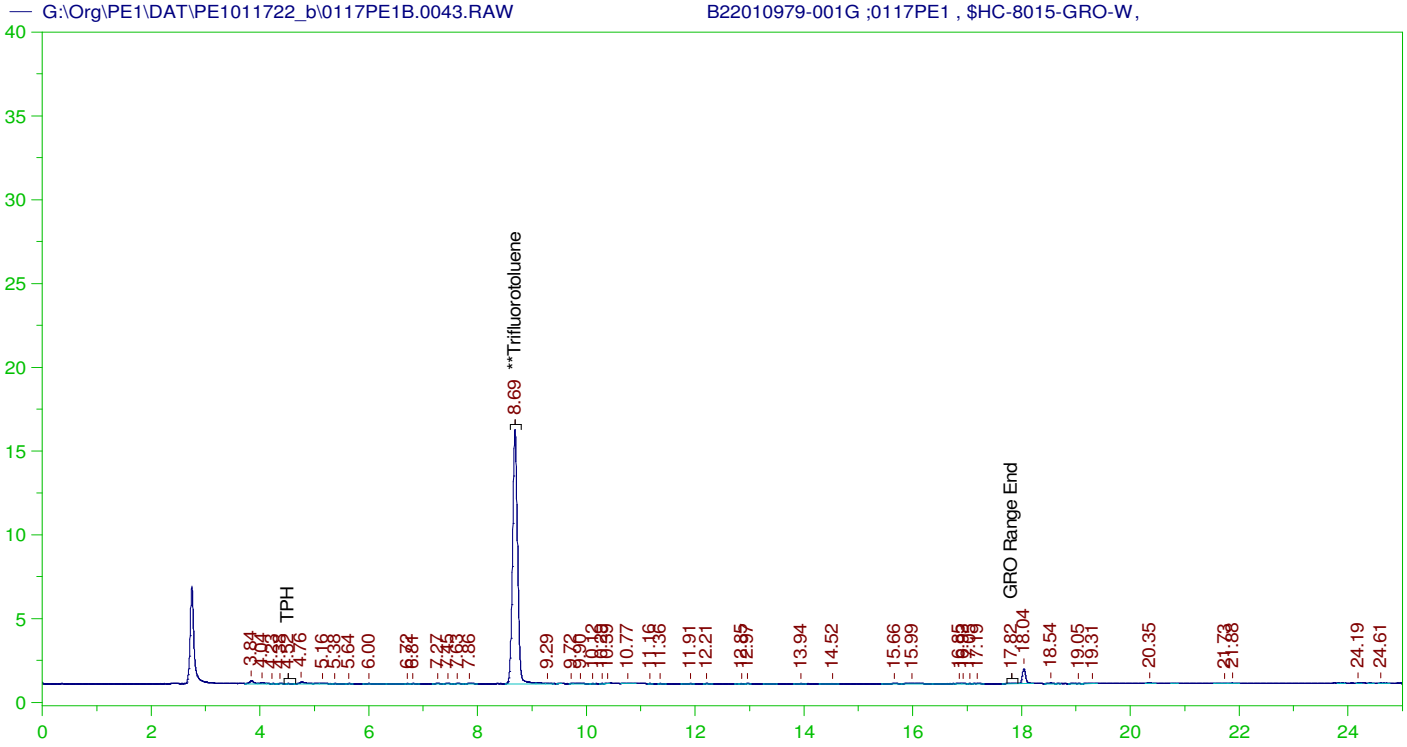
| | |
|---|---|
| Methane | 74-82-8 |

**SEMI-VOLATILE ORGANIC COMPOUNDS**

| | |
|---|---|
| 1,2,4-Trichlorobenzene | 120-82-1 |
| 1,2-Dichlorobenzene | 95-50-1 |
| 1,3-Dichlorobenzene | 541-73-1 |
| 1,4-Dichlorobenzene | 106-46-7 |
| 2,4,5-Trichlorophenol | 95-95-4 |
| 2,4,6-Trichlorophenol | 88-06-2 |
| 2,4-Dichlorophenol | 120-83-2 |
| 2,4-Dimethylphenol | 105-67-9 |
| 2,4-Dinitrophenol | 51-28-5 |
| 2,4-Dinitrotoluene | 121-14-2 |
| 2,6-Dinitrotoluene | 606-20-2 |
| 2-Chloronaphthalene | 91-58-7 |
| 2-Chlorophenol | 95-57-8 |
| 2-Nitrophenol | 88-75-5 |
| 3,3´-Dichlorobenzidine | 91-94-1 |
| 4,6-Dinitro-2-methylphenol | 534-52-1 |
| 4-Bromophenyl phenyl ether | 101-55-3 |
| 4-Chloro-3-methylphenol | 59-50-7 |
| 4-Chlorophenol | 106-48-9 |
| 4-Chlorophenyl phenyl ether | 7005-72-3 |
| 4-Nitrophenol | 100-02-7 |
| Azobenzene | 103-33-3 |
| bis(-2-chloroethoxy)Methane | 111-91-1 |
| bis(-2-chloroethyl)Ether | 111-44-4 |
| bis(2-chloroisopropyl)Ether | 108-60-1 |
| bis(2-ethylhexyl)Phthalate | 117-81-7 |
| Butylbenzylphthalate | 85-68-7 |
| Di-n-butyl phthalate | 84-74-2 |
| Di-n-octyl phthalate | 117-84-0 |
| Diethyl phthalate | 84-66-2 |
| Dimethyl phthalate | 131-11-3 |
| Hexachlorobenzene | 118-74-1 |
| Hexachlorobutadiene | 87-68-3 |
| Hexachlorocyclopentadiene | 77-47-4 |
| Hexachloroethane | 67-72-1 |
| Isophorone | 78-59-1 |
| m+p-Cresols | 15831-10-4 |
| n-Nitroso-di-n-propylamine | 621-64-7 |
| n-Nitrosodimethylamine | 62-75-9 |
| n-Nitrosodiphenylamine | 86-30-6 |
| Nitrobenzene | 98-95-3 |
| o-Cresol | 95-48-7 |
| Pentachlorophenol | 87-86-5 |
| Phenol | 108-95-2 |
| Pyridine | 110-86-1 |

**ERH2402 (OWDFMW07A)**

G:\Org\PE1\DAT\PE1011722_b\0117PE1B.0043.RAW B22010979-001G ;0117PE1 , $HC-8015-GRO-W,




**GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT**

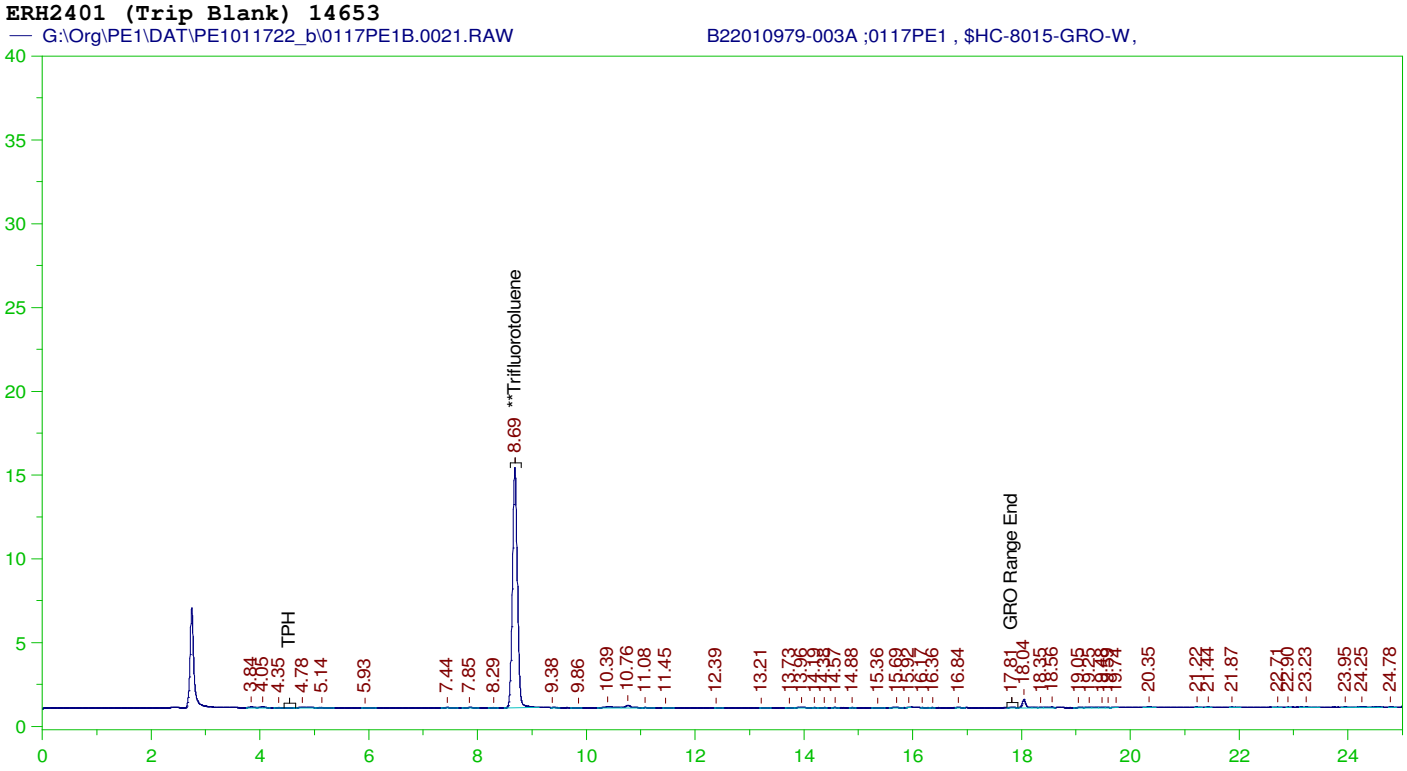
Sample Name: B22010979-001G ;0117PE1 , $HC-8015-GRO-W,
Raw File: G:\Org\PE1\DAT\PE1011722_b\0117PE1B.0043.RAW
Date & Time Acquired: 1/18/2022 7:33:30 AM
Method File: G:\Org\PE1\Methods\211208G979-1B%.MET
Calibration File: G:\Org\PE1\Cals\211208GRO8015CB.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for GRO: 945.9678
Mean RF for TPH: 909.3915
Rt range for Gasoline Range Organics: 4.45 to 17.93

| SURROGATE COMPOUND | RT | ACTUAL | MEASURED | %REC | |
|---|---|---|---|---|---|
| **Trifluorotoluene | 8.689 | 25. | 20.608 | 82.43 | - |

GRO Area:6069.522 GRO Amount: 1.283241
TPH Area:12939.13 TPH Amount: 2.845668

**ERH2401 (Trip Blank) 14653**




**GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B22010979-003A ;0117PE1 , $HC-8015-GRO-W,
Raw File: G:\Org\PE1\DAT\PE1011722_b\0117PE1B.0021.RAW
Date & Time Acquired: 1/17/2022 6:59:22 PM
Method File: G:\Org\PE1\Methods\211208G979-3B%.MET
Calibration File: G:\Org\PE1\Cals\211208GRO8015CB.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

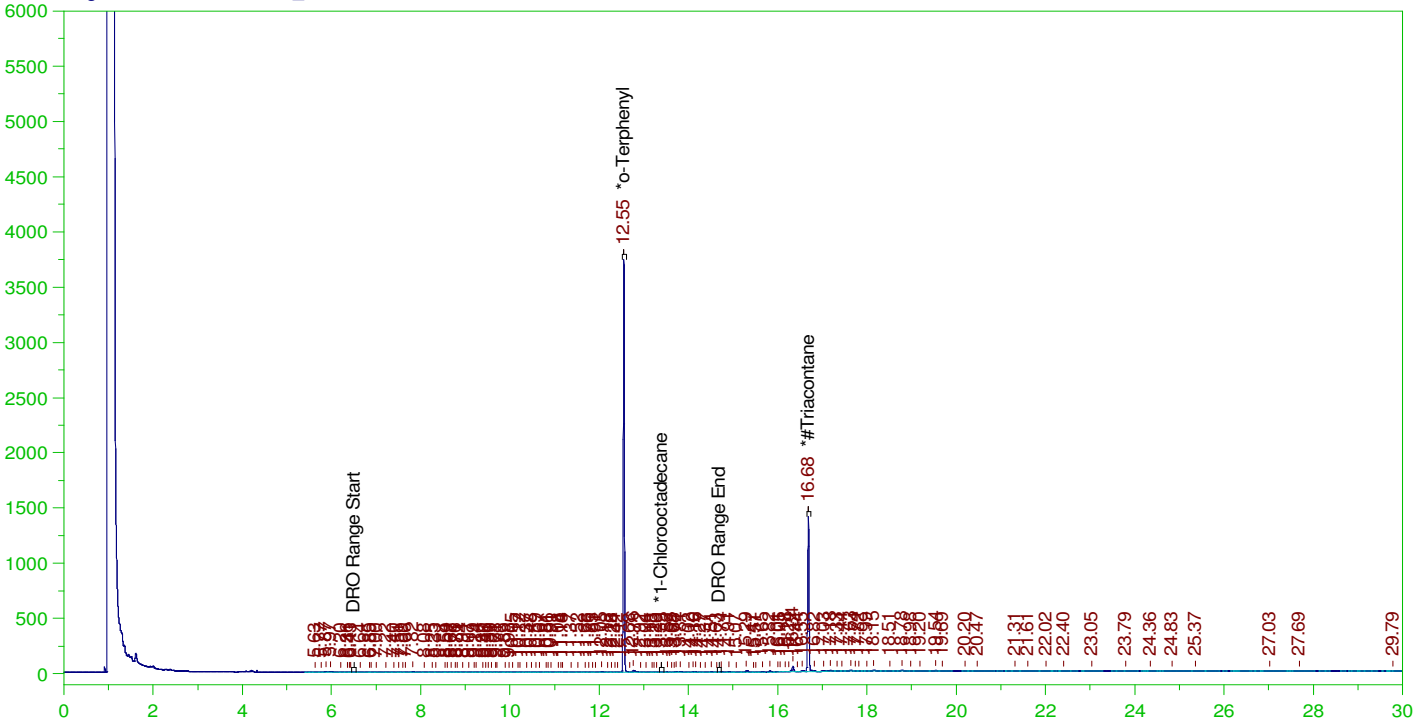
Mean RF for GRO: 945.9678
Mean RF for TPH: 909.3915
Rt range for Gasoline Range Organics: 4.45 to 17.93

| SURROGATE COMPOUND | RT | ACTUAL | MEASURED | %REC | |
|---|---|---|---|---|---|
| **Trifluorotoluene | 8.687 | 25. | 19.284 | 77.14 | - |

GRO Area:5875.792 GRO Amount: 1.242282
TPH Area:10823.57 TPH Amount: 2.380399

**ERH2402 (OWDFMW07A)** Batch ID: 162993

G:\org\HP4\DAT\HP4011822_b\0118HP4.0028.RAW B22010979-001D ;0118HP4 , $HC-8015-DRO-W,




**DIESEL RANGE ORGANICS CHROMATOGRAM REPORT**

Sample Name: B22010979-001D ;0118HP4 , $HC-8015-DRO-W,
Raw File: G:\org\HP4\DAT\HP4011822_b\0118HP4.0028.RAW
Date & Time Acquired: 1/19/2022 9:58:47 AM
Method File: G:\Org\HP4\methods\DR_8015-C24T-OM-L%.met
Calibration File: G:\Org\HP4\Cals\SW8015C_DRO211102OM-C24-TRI.CAL
Sample Weight: 1040 Dilution: 1 S.A.: 1

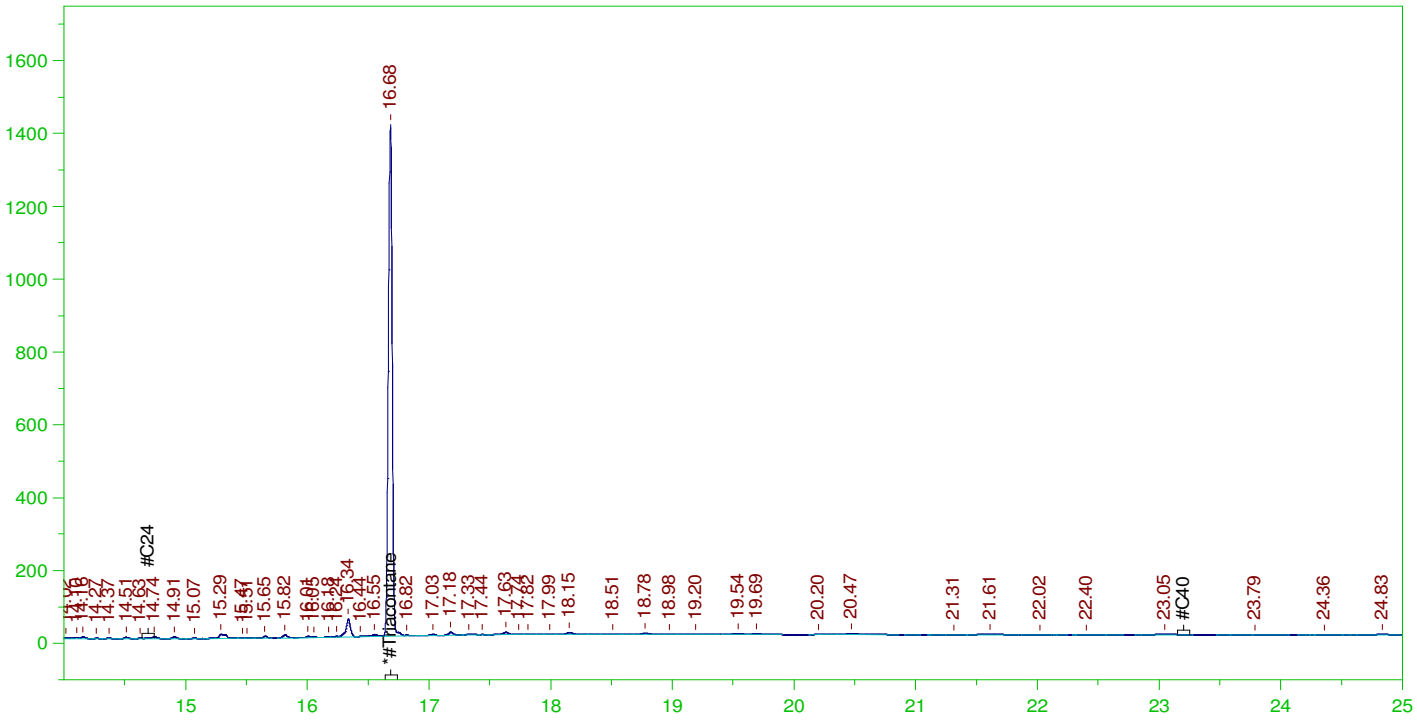
Mean RF for TEH: 29373.28
Rt range for Diesel Range Organics: 6.45 to 14.74

| SURROGATE COMPOUND | RT | ACTUAL | MEASURED | %REC | |
|---|---|---|---|---|---|
| *o-Terphenyl | 12.551 | .192 | .195 | 101.22 | - |
| *1-Chlorooctadecane | 13.39 | .192 | . | .04 | - |
| *#Triacontane | 16.683 | .192 | .118 | 61.35 | - |

DRO Area:448872.3 DRO Amount: 0.0146939
TEH Area:1080261 TEH Amount: 3.536249E-02

**ERH2402 (OWDFMW07A)** Batch ID: 162993

G:\org\HP4\DAT\HP4011822_b\0118HP4.0028.RAW B22010979-001D ;0118HP4 , $HC-8015-DRO-W,




**RESIDUAL RANGE ORGANICS CHROMATOGRAM**

Sample Name: B22010979-001D ;0118HP4 , $HC-8015-DRO-W,
Raw File: G:\org\HP4\DAT\HP4011822_b\0118HP4.0028.RAW
Date & Time Acquired: 1/19/2022 9:58:47 AM
Method File: G:\Org\HP4\Methods\DR_ORO-S-AFa-L%.met
Calibration File: G:\Org\HP4\Cals\SW8015C_ORO211007AFa-SAMPLE.CAL
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 24529.56
Rt range for Residual Range Organics: 14.64 to 23.25

| SURROGATE COMPOUND | RT | ACTUAL | MEASURED | %REC | |
|---|---|---|---|---|---|
| *#Triacontane | 16.683 | .481 | .118 | 24.54 | - |

RRO Area:500938.8 RRO AMOUNT: 1.963639E-02

**From:** Ramos, Alethea <alethea.ramos@aecom.com>
**Sent:** Monday, December 13, 2021 3:11 PM
**To:** Tabitha Edwards
**Cc:** Pascua, Margie; billingsPM@energylab.com
**Subject:** RE: [EXTERNAL] FW: CV18F0126: Expedited NOI Groundwater Samples, Saturday 12/12 Submission

**Categories:** Must Attend

Hi Tabitha,

I believe Casper WY is DoD ELAP accredited in the TOC 9060 method. I spoke to Shari and she indicated there is a daily courier between Billings and Casper, and would be appx. a day delay. Under those stipulations, please subcontract these samples and inform on expedited TAT.

Thank you,

**Alethea Ramos, CIH**
Environmental Scientist, Environmental Health & Science, Environment
D +1-808-529-7283
M +1-808-389-5383
alethea.ramos@aecom.com

**AECOM**
1001 Bishop Street
Suite 1600
Honolulu, HI 96813, United States of America
aecom.com



**From:** Tabitha Edwards <tedwards@energylab.com>
**Sent:** Monday, December 13, 2021 7:05 AM
**To:** Ramos, Alethea <alethea.ramos@aecom.com>
**Cc:** Pascua, Margie <Margie.Pascua@aecom.com>; billingsPM@energylab.com
**Subject:** [EXTERNAL] FW: CV18F0126: Expedited NOI Groundwater Samples, Saturday 12/12 Submission
**Importance:** High

Alethea,

The TOC by 9060 must be subcontracted to our office in Casper, WY. I need authorization from you to subcontract these. Once that has been received we will discuss the TAT with them and let you know what is achievable.

Thank you,

**Energy Laboratories, Inc.**
Trust our People. Trust our Data.

**Tabitha Edwards** | Office Manager | Billings, MT
O: 406-869-6286 | tedwards@energylab.com | www.energylab.com



***We want to help you ship successfully**! Please plan ahead and allow extra time to receive supplies from the lab and for the lab to receive your samples. All carriers are in full-swing holiday peak season operating with double the volume and limited capacity. We appreciate your business so please contact your local branch or Project Manager to discuss adjustments to your shipping schedule or to ask questions.*

---

**From:** Ramos, Alethea [mailto:alethea.ramos@aecom.com]
**Sent:** Saturday, December 11, 2021 3:20 AM
**To:** Shari Endy; billingsPM@energylab.com
**Cc:** Jillian Miller; Pascua, Margie; KaaihiliChoy, Terri Ann
**Subject:** CV18F0126: Expedited NOI Groundwater Samples, Saturday 12/12 Submission
**Importance:** High

Hi Shari and Billings PM,

You will be receiving a Saturday shipment (12/12) of groundwater samples indicated in the attached COCs. We will need results by **Wednesday, December 15th**, and will pay any fees incurred for an expedited TAT. Please proceed with analysis without preservation traceability. Please see below tracking information links:

https://www.fedex.com/fedextrack/?trknbr=287337969629&trkqual=2459558000~287337969629~FX
https://www.fedex.com/fedextrack/?trknbr=287343101019&trkqual=2459559000~287343101019~FX

Thank you,

**Alethea Ramos, CIH**
Environmental Scientist, Environmental Health & Science, Environment
D +1-808-529-7283
M +1-808-389-5383
alethea.ramos@aecom.com

**AECOM**
1001 Bishop Street
Suite 1600
Honolulu, HI 96813, United States of America
aecom.com

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