



ANALYTICAL SUMMARY REPORT

March 10, 2022

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

Work Order: B21112214 Quote ID: 5912

Project Name: CV18F0126/60571032.02.21.01

Energy Laboratories Inc Billings MT received the following 3 samples from AECOM - Honolulu on 11/29/2021 for analysis.

Lab ID	Client Sample ID	Collect Date	Received Date	Matrix	Test
B21112214-001	ERH1967 (Product Sample)	11/24/21 00:00	11/29/2021	Product	Hydrocarbon Identification, Simulated Distillation SimDist
B21112214-002	ERH1968 (Adit 3 Sump)	11/24/21 18:15	11/29/2021	Ground Water	DRO-Liquid-Liquid Extraction SW3520C Separatory Funnel SW3510C Liquid-Liquid Ext. 8260-Volatile Organic Compounds-Short List SW8260B Gasoline Range Organics SW8015C Diesel Range Organics SW8015C Semi-Volatile Organic Compounds SW8270C
B21112214-003	ERH1969 (Trip Blank)- Client Provided	11/24/21 22:20	11/29/2021	Trip Blank	8260-Volatile Organic Compounds-Short List SW8260B Gasoline Range Organics SW8015C

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:



CLIENT: AECOM - Honolulu
Project: CV18F0126/60571032.02.21.01
Work Order: B21112214

Report Date: 3/10/2022

CASE NARRATIVE

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.

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 Level IV 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. Corrective action regarding analytes by SW8015C DRO/RRO and Semi-Volatile Organic Compounds by EPA8270C analysis are summarized below.

Method SW8015C DRO/RRO:

B21112214-002BMS

Because the sample amount was significantly higher than the spike amount for some analytes, the Matrix Spike sample is calculated as a Duplicate sample based on the spike amount added plus the original sample concentration for those analytes. Higher than normal RPD values appear to be sample matrix related and may indicate a non-homogenous sample matrix.

B21112214-002BMS-RRO

TEH (Oil Range) Matrix Spike recovery was slightly above quality control limits. This appeared to be due to sample matrix.

B21112214-002BMS-RRO SGT

The SGT RRO Matrix Spike is not available as the analyte was diluted out due to the high concentration of DRO range analytes present in the sample. The dilution was necessary to prevent overloading of the silica gel column.

Method SW8270C:

ERH1968 (Adit 3 Sump), B21112214-002 The sample extract would not concentrate to 1 mL and was brought to a 4 mL final volume. The sample extract was diluted an additional 20 times at analysis due to target and non-target compound sample matrix interference. The Reporting Limit reflects the sample extract final volume and the additional dilution. At this dilution level, normal QC limits may not be achievable.

MB-161693

The surrogate 2-Fluorobiphenyl recovery was slightly below quality control limits. This was not considered significant and the laboratory continued with analysis.

02-Dec-21_CCV_2, LCS-161693, LCSD-161693, and B21112101-001AMS

The compounds n-Nitrosodimethylamine and 4-Nitrophenol recoveries were slightly above quality control limits. This was not considered significant and the laboratory continued with analysis. These compounds were not detected in the sample(s).



Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

DoD Samples

www.energylab.com

COC #: 202111-24 NOI-FSS

Page 1 of 2

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, Hawaii 96813	
Email	alethea.ramos / margie.pascua@aecom.com	
Receive Invoice	<input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email	Receive Report <input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email
Purchase Order	Quote	Bottle Order
N/A	N/A	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	<input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email	
Special Report/Formats:	<input checked="" type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC <input checked="" type="checkbox"/> EDD/EDT (contact laboratory) <input type="checkbox"/> Other	

Comments

- Project performed under DoD QSM.
- TPH-DRO/RRO needs 3520 extraction.
- Preliminary data (or Level 1) in 1-2 business days; Level IV report in 10 working days.
- ERH1967 is a neat product sample.

Project Information

Project Name, PWSID, Permit, etc.		
Sampler Name DM, JK	Sampler Phone	808-636-3319
Sample Origin State Hawaii	EPA/State Compliance	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
URANIUM MINING CLIENTS MUST indicate sample type		
<input type="checkbox"/> Unprocessed Ore		
<input type="checkbox"/> Processed Ore (Ground or Refined) **CALL BEFORE SENDING		
<input checked="" type="checkbox"/> 11(e)2 Byproduct Material (Can ONLY be Submitted to ELJ Casper Location)		

Matrix Codes	
A - Air	
W - Water	
S - Solids/Solids	
V - Vegetation	
B - Bioassay	
O - Oil	
DW - Drinking Water	

Analysis Requested

	EPA 8015 TPH-DRO/RRO	EPA 8015 TPH-DRO/RRO w/ SGC	8260 VOCs Full List, 8015 TPH-GRO	8270 SVOC Full List	MS Only TPH-DRO/RRO, TPH-DRO/RRO w/ SGC														
1	✓	✓																	
2	✓	✓	✓	✓	✓														
3			✓																
4																			
5																			
6																			
7																			
8																			
9																			

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

Sample Identification (Name, Location, Interval, etc.)	Collection		Number of Containers	Matrix (See Codes Above)	EPA 8015 TPH-DRO/RRO	EPA 8015 TPH-DRO/RRO w/ SGC	8260 VOCs Full List, 8015 TPH-GRO	8270 SVOC Full List	MS Only TPH-DRO/RRO, TPH-DRO/RRO w/ SGC										ELJ LAB ID Laboratory Job Only	
	Date	Time																		
1 ERH1967 (Product Sample)	11/24/2021	N/A	0	Product	✓	✓													X B21112214 001	
2 ERH1968 (Adit 3 Sump)	11/24/2021	2:15 pm	10	GW	✓	✓	✓	✓	✓										X -002	
3 ERH1969 (Trip Blank)	11/24/2021	6:20 pm	3	WQ			✓												X -005	
4																				
5 TB 8260 - TB 11/29/21 client																				-003
6 TB 8260 - TB 11/29/21 client																				-003
7 GRO Tahaia																				
8																				
9																				

ELJ is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

Custody Record MUST be signed	Relinquished by (print) Matthew Yim	Date/Time 11/26/21 1200	Signature <i>Matthew Yim</i>	Received by (print)	Date/Time	Signature			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print) Tahaia	Date/Time 11/29/21 0955	Signature <i>Tahaia</i>			
LABORATORY USE ONLY									
Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp 0.3 °C	Temp Blank Y N	Office Y N	Payment Type CC Cash Check	Amount \$	Receipt Number (cash/check only)

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.



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Chain of Custody & Analytical Request Record

www.energylab.com

COC #: 202111-24 NOI-FSS

DoD Samples

Page 2 of 2

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Phone	808-529-7283 / 808-356-5373	
Mailing Address	1001 Bishop St., Suite 1600	
City, State, Zip	Honolulu, Hawaii 96813	
Email	alethea.ramos / margie.pascua@aecom.com	
Receive Invoice	<input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email	Receive Report <input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email
Purchase Order	Quote	Bottle Order
N/A	N/A	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	<input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email
Special Report/Formats:	<input checked="" type="checkbox"/> LEVEL IV <input type="checkbox"/> INELAC <input checked="" type="checkbox"/> EDD/EDT (contact laboratory) <input type="checkbox"/> Other

Comments

1. Project performed under DoD QSM
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Sample Origin	State Hawaii	EPA/State Compliance	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
URANIUM MINING CLIENTS MUST indicate sample type			
<input type="checkbox"/> Unprocessed Ore			
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<input type="checkbox"/> 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)			

Matrix Codes	
A -	Air
W -	Water
S -	Solids/Solids
V -	Vegetation
B -	Biosessay
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DW -	Drinking Water

Analysis Requested

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1	✓	✓																	
2	✓	✓	✓	✓	✓														
3			✓																
4																			
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Sample Identification (Name, Location, Interval, etc.)	Collection		Number of Containers	Matrix (See Codes Above)	EPA 8015 TPH-DRO/RRO	EPA 8015 TPH-DRO/RRO w/ SGC	8260 VOCs Full List, 8015 TPH-GRO	8270 SVOC Full List	MS Only TPH-DRO/RRO, TPH-DRO/RRO w/ SGC	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
	Date	Time										
1 ERH1967 (Product Sample)	11/24/2021	N/A	5	Product	✓	✓					×	B21112214-001
2 ERH1968 (Adit 3 Sump)	11/24/2021	2:15 pm	0	GW	✓	✓	✓	✓	✓		×	-002
3 ERH1969 (Trip Blank)	11/24/2021	6:20 pm	0	WQ			✓				×	-003
4												
5 TB 8260 - client												-003
6 TB GRO - client												-003
7 TB 11/29/21												
8												
9												

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

Custody Record MUST be signed	Relinquished by (print) Matthew Yim	Date/Time 11/26/21 1200	Signature <i>Matthew Yim</i>	Received by (print)	Date/Time	Signature
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print) <i>Elva Gussler</i>	Date/Time 11/29/21 0935	Signature <i>Elva Gussler</i>
LABORATORY USE ONLY						
Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp 7.6 °C	Temp Blank Y N	On Ice Y N
			Payment Type CC Cash Check		Amount \$	Receipt Number (cash/check only)

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

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Work Order Receipt Checklist

AECOM - Honolulu

B21112214

Login completed by:

Date Received: 11/29/2021

Reviewed by: BL2000\gmccartney

Received by: tjg

Reviewed Date: 11/30/2021

Carrier name: FedEx

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

.....
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 Temperature Blank temperature for shipping container 1 was 0.3°C (Chain of Custody 1 of 2) and shipping container 2 was 2.6°C (Chain of Custody 2 of 2).

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.

The Trip Blanks for Gasoline Range Organics and Volatile Organic Compounds by 8260 were prepared by the client. Preservative traceability is not available for these containers.

The Project name was not provided on the Chain of Custody. The Project name is CV18F0126/60571032.02.21.01 per email from Alethea Ramos on 11/30/21.

Analyze sample ERH1967 (Product Sample) for Carbon Scan instead of Diesel Range Organics per conversation between Alethea Ramos and Shar Endy, Energy Laboratories Project Manager, on 12/01/21.

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 RPD limit 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 Quantitation (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: B21112214-001

Collection Date: 11/24/2021 00:00

Date Received: 11/29/2021

Report Date: 03/10/2022

Client: AECOM - Honolulu
Client Sample ID: ERH1967 (Product Sample)
Project: CV18F0126/60571032.02.21.01
Matrix: Product

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
HYDROCARBON ID, SIMULATED DISTILLATION												
C1-C5	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C5-C6	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C6-C7	0.02	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C7-C8	0.12	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C8-C9	1.1	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C9-C10	4.8	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C10-C11	15	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C11-C12	22	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C12-C13	23	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C13-C14	17	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C14-C15	11	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C15-C16	4.0	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C16-C17	0.93	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C17-C18	0.25	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C18-C19	0.07	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C19-C20	0.02	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C20-C21	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C21-C22	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C22-C23	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C23-C24	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C24-C25	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C25-C26	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C26-C27	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C27-C28	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C28-C29	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C29-C30	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C30-C32	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C32-C34	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C34-C36	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C36-C38	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C38-C40	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140
C40+	<0.01	Vol %	1		0.01	0.01	0.01		SimDist	12/2/2021 10:57/amn	GCFID-HP3-B_211202A : 1	R371140

- Calculated Average Molecular Weight: 175
- The hydrocarbon profile resembles #1 Diesel fuel or Kerosene.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B21112214-002

Collection Date: 11/24/2021 18:15

Date Received: 11/29/2021

Report Date: 03/10/2022

Client: AECOM - Honolulu
Client Sample ID: ERH1968 (Adit 3 Sump)
Project: CV18F0126/60571032.02.21.01
Matrix: Ground Water

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
VOLATILE ORGANIC COMPOUNDS												
Benzene	ND	ug/L	2	U	1.0	0.50	0.24		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Bromobenzene	ND	ug/L	2	U	1.0	0.50	0.23		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Bromochloromethane	ND	ug/L	2	U	1.0	1.0	0.35		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Bromodichloromethane	ND	ug/L	2	U	1.0	1.0	0.31		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Bromoform	ND	ug/L	2	U	1.0	0.50	0.24		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Bromomethane	ND	ug/L	2	U	1.0	1.0	0.51		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Carbon tetrachloride	ND	ug/L	2	U	1.0	1.0	0.33		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Chlorobenzene	ND	ug/L	2	U	1.0	0.50	0.24		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Chlorodibromomethane	ND	ug/L	2	U	1.0	0.50	0.17		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Chloroethane	ND	ug/L	2	U	1.0	1.0	0.34		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Chloroform	ND	ug/L	2	U	1.0	0.50	0.16		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Chloromethane	ND	ug/L	2	U	1.0	1.0	0.38		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,2-Dibromoethane	ND	ug/L	2	U	1.0	1.0	0.29		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
2-Chlorotoluene	ND	ug/L	2	U	1.0	0.50	0.18		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
4-Chlorotoluene	ND	ug/L	2	U	1.0	0.50	0.18		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Dibromomethane	ND	ug/L	2	U	1.0	1.0	0.32		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,2-Dichlorobenzene	ND	ug/L	2	U	1.0	0.50	0.17		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,3-Dichlorobenzene	ND	ug/L	2	U	1.0	0.50	0.20		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,4-Dichlorobenzene	ND	ug/L	2	U	1.0	0.50	0.17		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Dichlorodifluoromethane	ND	ug/L	2	U	1.0	1.0	0.35		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,1-Dichloroethane	ND	ug/L	2	U	1.0	1.0	0.35		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,2-Dichloroethane	ND	ug/L	2	U	1.0	1.0	0.31		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,1-Dichloroethene	ND	ug/L	2	U	1.0	1.0	0.29		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
cis-1,2-Dichloroethene	ND	ug/L	2	U	1.0	1.0	0.33		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
trans-1,2-Dichloroethene	ND	ug/L	2	U	1.0	1.0	0.30		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,2-Dichloropropane	ND	ug/L	2	U	1.0	0.50	0.18		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,3-Dichloropropane	ND	ug/L	2	U	1.0	0.50	0.21		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
2,2-Dichloropropane	ND	ug/L	2	U	1.0	1.0	0.39		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,1-Dichloropropene	ND	ug/L	2	U	1.0	0.50	0.17		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
cis-1,3-Dichloropropene	ND	ug/L	2	U	1.0	0.50	0.19		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
trans-1,3-Dichloropropene	ND	ug/L	2	U	1.0	0.50	0.17		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Ethylbenzene	6.0	ug/L	2		1.0	0.50	0.18		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Methyl ethyl ketone	ND	ug/L	2	U	20	10	4.4		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Methyl tert-butyl ether (MTBE)	ND	ug/L	2	U	1.0	0.50	0.24		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Methylene chloride	0.32	ug/L	2	J	1.0	1.0	0.27		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Styrene	ND	ug/L	2	U	1.0	0.50	0.13		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,1,1,2-Tetrachloroethane	ND	ug/L	2	U	1.0	0.50	0.21		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,1,2,2-Tetrachloroethane	ND	ug/L	2	U	1.0	0.50	0.17		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Tetrachloroethene	ND	ug/L	2	U	1.0	0.50	0.13		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B21112214-002

Collection Date: 11/24/2021 18:15

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Report Date: 03/10/2022

Client: AECOM - Honolulu
Client Sample ID: ERH1968 (Adit 3 Sump)
Project: CV18F0126/60571032.02.21.01
Matrix: Ground Water

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
VOLATILE ORGANIC COMPOUNDS												
Toluene	4.7	ug/L	2		1.0	0.50	0.15		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,1,1-Trichloroethane	ND	ug/L	2	U	1.0	1.0	0.26		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,1,2-Trichloroethane	ND	ug/L	2	U	1.0	0.50	0.22		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Trichloroethene	ND	ug/L	2	U	1.0	0.50	0.20		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Trichlorofluoromethane	ND	ug/L	2	U	1.0	1.0	0.27		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
1,2,3-Trichloropropane	ND	ug/L	2	U	1.0	1.0	0.77		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Vinyl chloride	ND	ug/L	2	U	1.0	1.0	0.31		SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
m+p-Xylenes	26	ug/L	10		5.0	5.0	1.6		SW8260B	12/5/2021 15:41/msc	VOA5975C.I_211205A : 7	R371393
o-Xylene	45	ug/L	10		5.0	2.0	0.60		SW8260B	12/5/2021 15:41/msc	VOA5975C.I_211205A : 7	R371393
Xylenes, Total	71	ug/L	10		5.0	2.0	0.60		SW8260B	12/5/2021 15:41/msc	VOA5975C.I_211205A : 7	R371393
Surr: Dibromofluoromethane	107.0	%REC	2		80-119				SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Surr: 1,2-Dichloroethane-d4	104.0	%REC	2		81-118				SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Surr: Toluene-d8	103.0	%REC	2		89-112				SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
Surr: p-Bromofluorobenzene	107.0	%REC	2		85-114				SW8260B	12/5/2021 14:19/msc	VOA5975C.I_211205A : 6	R371393
PETROLEUM HYDROCARBONS-VOLATILE												
C6 to C10	253	ug/L	10		200	87	23		SW8015C	12/2/2021 14:44/jp	PE 1_211202A : 6	R371174
Total Purgeable Hydrocarbons	2270	ug/L	10		200	100	36		SW8015C	12/2/2021 14:44/jp	PE 1_211202A : 6	R371174
Surr: Trifluorotoluene	81.0	%REC	10		70-130				SW8015C	12/2/2021 14:44/jp	PE 1_211202A : 6	R371174
- 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)	684	mg/L	50		28	14	3.7		SW8015C	12/1/2021 04:30/amn	GCFID-HP5-B_211129C : 17	161704
Diesel Range Organics (C10 to C24)	714	mg/L	50		28	14	3.7		SW8015C	12/1/2021 04:30/amn	GCFID-HP5-B_211129C : 21	161704
Diesel Range Organics (SGT-C10 to C24)	668	mg/L	25		14	5.7	1.8		SW8015C	12/2/2021 18:52/amn	GCFID-HP5-B_211202A : 12	161704
Oil Range Hydrocarbons (C24 to C40)	0.98	mg/L	1		0.57	0.28	0.17		SW8015C	12/1/2021 11:38/amn	GCFID-HP5-B_211129C : 25	161704
Oil Range Hydrocarbons (SGT-C24 to C40)	ND	mg/L	25	UO	14	7.1	4.2		SW8015C	12/2/2021 18:52/amn	GCFID-HP5-B_211202A : 12	161704
Total Extractable Hydrocarbons	737	mg/L	50		28	14	7.1		SW8015C	12/1/2021 04:30/amn	GCFID-HP5-B_211129C : 21	161704
Total Extractable Hydrocarbons	707	mg/L	50		28	14	7.1		SW8015C	12/1/2021 04:30/amn	GCFID-HP5-B_211129C : 17	161704
Total Extractable Hydrocarbons (SGT)	688	mg/L	25		14	5.7	1.6		SW8015C	12/2/2021 18:52/amn	GCFID-HP5-B_211202A : 12	161704
Surr: o-Terphenyl	97.0	%REC	1		56-125				SW8015C	12/1/2021 11:38/amn	GCFID-HP5-B_211129C : 25	161704
Surr: o-Terphenyl (SGT)	85.0	%REC	25		56-125				SW8015C	12/2/2021 18:52/amn	GCFID-HP5-B_211202A : 12	161704
Surr: n-Triacontane	95.0	%REC	1		50-150				SW8015C	12/1/2021 11:38/amn	GCFID-HP5-B_211129C : 25	161704
Surr: n-Triacontane (SGT)	67.0	%REC	25	J	50-150				SW8015C	12/2/2021 18:52/amn	GCFID-HP5-B_211202A : 12	161704
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.												
SEMI-VOLATILE ORGANIC COMPOUNDS												
1,2,4-Trichlorobenzene	ND	ug/L	20	U	417	417	158		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
1,2-Dichlorobenzene	ND	ug/L	20	U	417	417	164		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B21112214-002

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Client: AECOM - Honolulu
Client Sample ID: ERH1968 (Adit 3 Sump)
Project: CV18F0126/60571032.02.21.01
Matrix: Ground Water

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
SEMI-VOLATILE ORGANIC COMPOUNDS												
1,3-Dichlorobenzene	ND	ug/L	20	U	417	417	178		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
1,4-Dichlorobenzene	ND	ug/L	20	U	417	417	168		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
1-Methylnaphthalene	6500	ug/L	20		417	417	199		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2,4,5-Trichlorophenol	ND	ug/L	20	U	417	417	186		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2,4,6-Trichlorophenol	ND	ug/L	20	U	417	417	220		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2,4-Dichlorophenol	ND	ug/L	20	U	417	417	141		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2,4-Dimethylphenol	ND	ug/L	20	U	417	417	141		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2,4-Dinitrophenol	ND	ug/L	20	U	834	834	355		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2,4-Dinitrotoluene	ND	ug/L	20	U	417	417	254		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2,6-Dinitrotoluene	ND	ug/L	20	U	417	417	267		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2-Chloronaphthalene	ND	ug/L	20	U	417	417	178		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2-Chlorophenol	ND	ug/L	20	U	417	417	207		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2-Methylnaphthalene	8990	ug/L	20		417	417	160		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
2-Nitrophenol	ND	ug/L	20	U	417	417	197		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
3,3'-Dichlorobenzidine	ND	ug/L	20	U	834	417	176		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
4,6-Dinitro-2-methylphenol	ND	ug/L	20	U	834	834	194		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
4-Bromophenyl phenyl ether	ND	ug/L	20	U	417	417	145		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
4-Chloro-3-methylphenol	ND	ug/L	20	U	417	417	122		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
4-Chlorophenol	ND	ug/L	20	U	417	417	220		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
4-Chlorophenyl phenyl ether	ND	ug/L	20	U	417	417	169		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
4-Nitrophenol	ND	ug/L	20	U	834	834	208		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Acenaphthene	ND	ug/L	20	U	417	417	158		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Acenaphthylene	ND	ug/L	20	U	417	417	131		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Anthracene	ND	ug/L	20	U	417	417	103		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Azobenzene	ND	ug/L	20	U	417	417	91		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Benzidine	ND	ug/L	20	U	834	834	560		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Benzo(a)anthracene	ND	ug/L	20	U	417	417	71		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Benzo(a)pyrene	ND	ug/L	20	U	417	417	103		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Benzo(b)fluoranthene	ND	ug/L	20	U	417	417	75		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Benzo(g,h,i)perylene	ND	ug/L	20	U	417	417	84		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Benzo(k)fluoranthene	ND	ug/L	20	U	417	417	81		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
bis(-2-chloroethoxy)Methane	ND	ug/L	20	U	417	417	113		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
bis(-2-chloroethyl)Ether	ND	ug/L	20	U	417	417	214		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
bis(2-chloroisopropyl)Ether	ND	ug/L	20	U	417	417	124		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
bis(2-ethylhexyl)Phthalate	ND	ug/L	20	U	417	417	159		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Butylbenzylphthalate	284	ug/L	20	J	417	417	131		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Chrysene	ND	ug/L	20	U	417	417	98		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Di-n-butyl phthalate	ND	ug/L	20	U	417	417	78		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Di-n-octyl phthalate	ND	ug/L	20	U	417	417	112		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B21112214-002

Collection Date: 11/24/2021 18:15

Date Received: 11/29/2021

Report Date: 03/10/2022

Client: AECOM - Honolulu
Client Sample ID: ERH1968 (Adit 3 Sump)
Project: CV18F0126/60571032.02.21.01
Matrix: Ground Water

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
SEMI-VOLATILE ORGANIC COMPOUNDS												
Dibenzo(a,h)anthracene	ND	ug/L	20	U	417	417	98		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Diethyl phthalate	ND	ug/L	20	U	417	417	182		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Dimethyl phthalate	ND	ug/L	20	U	417	417	143		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Fluoranthene	ND	ug/L	20	U	417	417	74		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Fluorene	ND	ug/L	20	U	417	417	152		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Hexachlorobenzene	ND	ug/L	20	U	417	417	111		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Hexachlorobutadiene	ND	ug/L	20	U	417	417	193		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Hexachlorocyclopentadiene	ND	ug/L	20	U	417	417	248		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Hexachloroethane	ND	ug/L	20	U	417	417	149		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Indeno(1,2,3-cd)pyrene	ND	ug/L	20	U	417	417	104		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Isophorone	ND	ug/L	20	U	417	417	139		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
m+p-Cresols	ND	ug/L	20	U	417	417	148		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
n-Nitroso-di-n-propylamine	ND	ug/L	20	U	417	417	128		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
n-Nitrosodimethylamine	ND	ug/L	20	U	417	417	128		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
n-Nitrosodiphenylamine	ND	ug/L	20	U	417	417	97		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Naphthalene	4450	ug/L	20		417	417	145		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Nitrobenzene	ND	ug/L	20	U	417	417	193		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
o-Cresol	ND	ug/L	20	U	417	417	153		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Pentachlorophenol	ND	ug/L	20	U	834	834	354		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Phenanthrene	ND	ug/L	20	U	417	417	65		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Phenol	ND	ug/L	20	U	417	417	122		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Pyrene	ND	ug/L	20	U	417	417	77		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Pyridine	ND	ug/L	20	U	417	417	269		SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Surr: 2,4,6-Tribromophenol	0.0	%REC	20	O	43-140				SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Surr: 2-Fluorobiphenyl	0.0	%REC	20	O	44-119				SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Surr: 2-Fluorophenol	0.0	%REC	20	O	19-119				SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Surr: Nitrobenzene-d5	0.0	%REC	20	O	44-120				SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Surr: Phenol-d5	0.0	%REC	20	O	10-65				SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693
Surr: Terphenyl-d14	0.0	%REC	20	O	50-134				SW8270C	12/2/2021 17:20/dsm	SV5973N.I_211202A : 4	161693

- The sample extract would not concentrate to 1 mL and was brought to a 4 mL final volume. The sample extract was diluted an additional 20 times at analysis due to target and non-target compound sample matrix interference. The Reporting Limit reflects the sample extract final volume and the additional dilution. At this dilution level, normal QC limits may not be achievable.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B21112214-003

Collection Date: 11/24/2021 22:20

Date Received: 11/29/2021

Report Date: 03/10/2022

Client: AECOM - Honolulu
Client Sample ID: ERH1969 (Trip Blank)-Client Provided
Project: CV18F0126/60571032.02.21.01
Matrix: Trip Blank

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	0.25	0.12		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Bromobenzene	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Bromochloromethane	ND	ug/L	1	U	1.0	0.50	0.18		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Bromodichloromethane	ND	ug/L	1	U	1.0	0.50	0.16		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Bromoform	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Bromomethane	ND	ug/L	1	U	1.0	0.50	0.25		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Carbon tetrachloride	ND	ug/L	1	U	1.0	0.50	0.16		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Chlorobenzene	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Chlorodibromomethane	ND	ug/L	1	U	1.0	0.25	0.084		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Chloroethane	ND	ug/L	1	U	1.0	0.50	0.17		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Chloroform	ND	ug/L	1	U	1.0	0.25	0.079		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Chloromethane	ND	ug/L	1	U	1.0	0.50	0.19		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,2-Dibromoethane	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
2-Chlorotoluene	ND	ug/L	1	U	1.0	0.25	0.088		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
4-Chlorotoluene	ND	ug/L	1	U	1.0	0.25	0.091		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Dibromomethane	ND	ug/L	1	U	1.0	0.50	0.16		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,2-Dichlorobenzene	ND	ug/L	1	U	1.0	0.25	0.086		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,3-Dichlorobenzene	ND	ug/L	1	U	1.0	0.25	0.10		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,4-Dichlorobenzene	ND	ug/L	1	U	1.0	0.25	0.086		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Dichlorodifluoromethane	ND	ug/L	1	U	1.0	0.50	0.18		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,1-Dichloroethane	ND	ug/L	1	U	1.0	0.50	0.18		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,2-Dichloroethane	ND	ug/L	1	U	1.0	0.50	0.16		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,1-Dichloroethene	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
cis-1,2-Dichloroethene	ND	ug/L	1	U	1.0	0.50	0.17		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
trans-1,2-Dichloroethene	ND	ug/L	1	U	1.0	0.50	0.15		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,2-Dichloropropane	ND	ug/L	1	U	1.0	0.25	0.089		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,3-Dichloropropane	ND	ug/L	1	U	1.0	0.25	0.11		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
2,2-Dichloropropane	ND	ug/L	1	U	1.0	0.50	0.20		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,1-Dichloropropene	ND	ug/L	1	U	1.0	0.25	0.083		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
cis-1,3-Dichloropropene	ND	ug/L	1	U	1.0	0.25	0.094		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
trans-1,3-Dichloropropene	ND	ug/L	1	U	1.0	0.25	0.085		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Ethylbenzene	ND	ug/L	1	U	1.0	0.25	0.091		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Methyl ethyl ketone	ND	ug/L	1	U	20	5.0	2.2		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Methyl tert-butyl ether (MTBE)	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Methylene chloride	ND	ug/L	1	U	1.0	0.50	0.13		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Styrene	ND	ug/L	1	U	1.0	0.25	0.067		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,1,1,2-Tetrachloroethane	ND	ug/L	1	U	1.0	0.25	0.11		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,1,2,2-Tetrachloroethane	ND	ug/L	1	U	1.0	0.25	0.087		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Tetrachloroethene	ND	ug/L	1	U	1.0	0.25	0.067		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B21112214-003

Collection Date: 11/24/2021 22:20

Date Received: 11/29/2021

Report Date: 03/10/2022

Client: AECOM - Honolulu
Client Sample ID: ERH1969 (Trip Blank)-Client Provided
Project: CV18F0126/60571032.02.21.01
Matrix: Trip Blank

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
VOLATILE ORGANIC COMPOUNDS												
Toluene	ND	ug/L	1	U	1.0	0.25	0.075		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,1,1-Trichloroethane	ND	ug/L	1	U	1.0	0.50	0.13		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,1,2-Trichloroethane	ND	ug/L	1	U	1.0	0.25	0.11		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Trichloroethene	ND	ug/L	1	U	1.0	0.25	0.099		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Trichlorofluoromethane	ND	ug/L	1	U	1.0	0.50	0.13		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
1,2,3-Trichloropropane	ND	ug/L	1	U	1.0	0.50	0.38		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Vinyl chloride	ND	ug/L	1	U	1.0	0.50	0.15		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
m+p-Xylenes	ND	ug/L	1	U	1.0	0.50	0.16		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
o-Xylene	ND	ug/L	1	U	1.0	0.20	0.060		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Xylenes, Total	ND	ug/L	1	U	1.0	0.20	0.060		SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Surr: Dibromofluoromethane	105.0	%REC	1		80-119				SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Surr: 1,2-Dichloroethane-d4	103.0	%REC	1		81-118				SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Surr: Toluene-d8	104.0	%REC	1		89-112				SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
Surr: p-Bromofluorobenzene	108.0	%REC	1		85-114				SW8260B	12/5/2021 13:52/msc	VOA5975C.I_211205A : 5	R371393
PETROLEUM HYDROCARBONS-VOLATILE												
C6 to C10	ND	ug/L	1	U	20	8.7	232		SW8015C	12/2/2021 14:09/jp	PE 1_211202A : 5	R371174
Total Purgeable Hydrocarbons	ND	ug/L	1	U	20	10	3.6		SW8015C	12/2/2021 14:09/jp	PE 1_211202A : 5	R371174
Surr: Trifluorotoluene	80.0	%REC	1		70-130				SW8015C	12/2/2021 14:09/jp	PE 1_211202A : 5	R371174
- 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.												



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 4 **SampType:** Method Blank **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 13:24 **Prep Date:**
Lab ID: MBLK120521_ **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									
Bromomethane	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									



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 4 **SampType:** Method Blank **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 13:24 **Prep Date:**
Lab ID: MBLK120521_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
2,2-Dichloropropane	ND	0.50									
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	10	0.50	10		105.0	81	118				
Surr: Dibromofluoromethane	10	0.50	10		105.0	80	119				
Surr: p-Bromofluorobenzene	11	0.50	10		105.0	85	114				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 4 **SampType:** Method Blank **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 13:24 **Prep Date:**
Lab ID: MBLK120521_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Surr: Toluene-d8	10	0.50	10		104.0	89	112				

Associated Samples: **B21112214-002C, B21112214-003A**

Run ID: Run Order: VOA5975C.I_211205A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 12:30 **Prep Date:**
Lab ID: LCS120521_ **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		99.0	79	120				
Bromobenzene	5.2	0.50	5.0		103.0	80	120				
Bromochloromethane	4.9	0.50	5.0		99.0	78	123				
Bromodichloromethane	5.0	0.50	5.0		101.0	79	125				
Bromoform	5.2	0.50	5.0		105.0	66	130				
Bromomethane	5.4	0.50	5.0		108.0	53	141				
Carbon tetrachloride	4.6	0.50	5.0		91.0	72	136				
Chlorobenzene	5.1	0.50	5.0		103.0	82	118				
Chlorodibromomethane	5.0	0.50	5.0		99.0	74	126				
Chloroethane	4.9	0.50	5.0		98.0	60	138				
Chloroform	4.8	0.50	5.0		95.0	79	124				
Chloromethane	4.9	0.50	5.0		99.0	50	139				
1,2-Dibromoethane	5.0	0.50	5.0		100.0	78	122				
2-Chlorotoluene	5.3	0.50	5.0		105.0	79	122				
Dibromomethane	5.0	0.50	5.0		99.0	79	123				
1,2-Dichlorobenzene	5.2	0.50	5.0		105.0	80	119				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 12:30 **Prep Date:**
Lab ID: LCS120521_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
4-Chlorotoluene	5.3	0.50	5.0		105.0	78	122				
1,3-Dichlorobenzene	5.2	0.50	5.0		104.0	80	119				
1,4-Dichlorobenzene	5.1	0.50	5.0		102.0	79	118				
Dichlorodifluoromethane	5.0	0.50	5.0		100.0	32	152				
1,1-Dichloroethane	5.0	0.50	5.0		100.0	77	125				
1,2-Dichloroethane	4.9	0.50	5.0		98.0	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	4.9	0.50	5.0		98.0	75	124				
1,2-Dichloropropane	5.1	0.50	5.0		102.0	78	122				
1,3-Dichloropropane	4.9	0.50	5.0		99.0	80	119				
2,2-Dichloropropane	5.0	0.50	5.0		100.0	60	139				
1,1-Dichloropropene	4.5	0.50	5.0		91.0	79	125				
cis-1,3-Dichloropropene	4.8	0.50	5.0		96.0	75	124				
trans-1,3-Dichloropropene	5.1	0.50	5.0		102.0	73	127				
Ethylbenzene	5.1	0.50	5.0		101.0	79	121				
Methyl tert-butyl ether (MTBE)	5.3	0.50	5.0		107.0	71	124				
Methyl ethyl ketone	51	10	50		103.0	56	143				
Methylene chloride	4.6	0.50	5.0		92.0	74	124				
Styrene	5.4	0.50	5.0		108.0	78	123				
1,1,1,2-Tetrachloroethane	5.0	0.50	5.0		99.0	78	124				
1,1,2,2-Tetrachloroethane	5.0	0.50	5.0		100.0	71	121				
Tetrachloroethene	4.8	0.50	5.0		96.0	74	129				
Toluene	5.1	0.50	5.0		103.0	80	121				
1,1,1-Trichloroethane	4.7	0.50	5.0		94.0	74	131				
1,1,2-Trichloroethane	5.0	0.50	5.0		101.0	80	119				
Trichloroethene	4.8	0.50	5.0		95.0	79	123				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 12:30 **Prep Date:**
Lab ID: LCS120521_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Trichlorofluoromethane	4.8	0.50	5.0		96.0	65	141				
1,2,3-Trichloropropane	4.6	0.50	5.0		93.0	73	125				
Vinyl chloride	4.9	0.50	5.0		98.0	58	137				
m+p-Xylenes	10	0.50	10		101.0	80	121				
o-Xylene	5.2	0.50	5.0		104.0	78	122				
Xylenes, Total	15	0.50	15		102.0	79	121				
Surr: 1,2-Dichloroethane-d4	10	0.50	10		101.0	81	118				
Surr: Dibromofluoromethane	10	0.50	10		104.0	80	119				
Surr: p-Bromofluorobenzene	10	0.50	10		105.0	85	114				
Surr: Toluene-d8	11	0.50	10		107.0	89	112				

Associated Samples: **B21112214-002C, B21112214-003A**

Run ID: Run Order: VOA5975C.I_211205A: 9 **SampType:** Sample Matrix Spike **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 16:08 **Prep Date:**
Lab ID: B21112214-002CMS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	47	5.0	50	0.0	94.0	79	120				
Bromobenzene	50	5.0	50	0.0	99.0	80	120				
Bromochloromethane	46	5.0	50	0.0	93.0	78	123				
Bromodichloromethane	47	5.0	50	0.0	94.0	79	125				
Bromoform	49	5.0	50	0.0	99.0	66	130				
Bromomethane	55	5.0	50	0.0	110.0	53	141				
Carbon tetrachloride	45	5.0	50	0.0	91.0	72	136				
Chlorobenzene	48	5.0	50	0.0	96.0	82	118				
Chlorodibromomethane	46	5.0	50	0.0	92.0	74	126				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 9 **SampType:** Sample Matrix Spike **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 16:08 **Prep Date:**
Lab ID: B21112214-002CMS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Chloroethane	48	5.0	50	0.0	96.0	60	138				
Chloroform	45	5.0	50	0.0	90.0	79	124				
Chloromethane	45	5.0	50	0.0	90.0	50	139				
1,2-Dibromoethane	47	5.0	50	0.0	94.0	78	122				
2-Chlorotoluene	53	5.0	50	0.0	106.0	79	122				
Dibromomethane	47	5.0	50	0.0	95.0	79	123				
1,2-Dichlorobenzene	50	5.0	50	0.0	101.0	80	119				
4-Chlorotoluene	58	5.0	50	0.0	116.0	78	122				
1,3-Dichlorobenzene	52	5.0	50	0.0	103.0	80	119				
1,4-Dichlorobenzene	49	5.0	50	0.0	98.0	79	118				
Dichlorodifluoromethane	63	5.0	50	0.0	125.0	32	152				
1,1-Dichloroethane	48	5.0	50	0.0	96.0	77	125				
1,2-Dichloroethane	47	5.0	50	0.0	93.0	73	128				
1,1-Dichloroethene	46	5.0	50	0.0	92.0	71	131				
cis-1,2-Dichloroethene	47	5.0	50	0.0	95.0	78	123				
trans-1,2-Dichloroethene	47	5.0	50	0.0	95.0	75	124				
1,2-Dichloropropane	48	5.0	50	0.0	96.0	78	122				
1,3-Dichloropropane	46	5.0	50	0.0	92.0	80	119				
2,2-Dichloropropane	47	5.0	50	0.0	94.0	60	139				
1,1-Dichloropropene	45	5.0	50	0.0	90.0	79	125				
cis-1,3-Dichloropropene	46	5.0	50	0.0	92.0	75	124				
trans-1,3-Dichloropropene	47	5.0	50	0.0	95.0	73	127				
Ethylbenzene	55	5.0	50	5.7	99.0	79	121				
Methyl tert-butyl ether (MTBE)	48	5.0	50	0.0	96.0	71	124				
Methyl ethyl ketone	504	100	500	0.0	101.0	56	143				
Methylene chloride	45	5.0	50	0.0	90.0	74	124				
Styrene	52	5.0	50	0.0	105.0	78	123				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 9 **SampType:** Sample Matrix Spike **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 16:08 **Prep Date:**
Lab ID: B21112214-002CMS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	46	5.0	50	0.0	91.0	78	124				
1,1,2,2-Tetrachloroethane	48	5.0	50	0.0	97.0	71	121				
Tetrachloroethene	48	5.0	50	0.0	95.0	74	129				
Toluene	54	5.0	50	4.4	99.0	80	121				
1,1,1-Trichloroethane	46	5.0	50	0.0	92.0	74	131				
1,1,2-Trichloroethane	46	5.0	50	0.0	92.0	80	119				
Trichloroethene	46	5.0	50	0.0	92.0	79	123				
Trichlorofluoromethane	49	5.0	50	0.0	97.0	65	141				
1,2,3-Trichloropropane	46	5.0	50	0.0	92.0	73	125				
Vinyl chloride	51	5.0	50	0.0	101.0	58	137				
m+p-Xylenes	125	5.0	100	26	100.0	80	121				
o-Xylene	95	5.0	50	45	101.0	78	122				
Xylenes, Total	220	5.0	150	71	100.0	79	121				
Surr: 1,2-Dichloroethane-d4	102	5.0	100	0.0	102.0	81	118				
Surr: Dibromofluoromethane	102	5.0	100	0.0	102.0	80	119				
Surr: p-Bromofluorobenzene	106	5.0	100	0.0	106.0	85	114				
Surr: Toluene-d8	104	5.0	100	0.0	104.0	89	112				

Associated Samples: **B21112214-002C, B21112214-003A**

Run ID: Run Order: VOA5975C.I_211205A: 10 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 16:35 **Prep Date:**
Lab ID: B21112214-002CMSD **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	51	5.0	50	0.0	102.0	79	120	47	7.3	20.0	
Bromobenzene	52	5.0	50	0.0	105.0	80	120	50	5.4	20.0	



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 10 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 16:35 **Prep Date:**
Lab ID: B21112214-002CMSD **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Bromochloromethane	49	5.0	50	0.0	98.0	78	123	46	5.9	20.0	
Bromodichloromethane	49	5.0	50	0.0	98.0	79	125	47	4.2	20.0	
Bromoform	51	5.0	50	0.0	103.0	66	130	49	3.9	20.0	
Bromomethane	59	5.0	50	0.0	118.0	53	141	55	7.1	20.0	
Carbon tetrachloride	49	5.0	50	0.0	98.0	72	136	45	7.9	20.0	
Chlorobenzene	51	5.0	50	0.0	102.0	82	118	48	6.0	20.0	
Chlorodibromomethane	51	5.0	50	0.0	101.0	74	126	46	10.0	20.0	
Chloroethane	47	5.0	50	0.0	95.0	60	138	48	1.1	20.0	
Chloroform	48	5.0	50	0.0	96.0	79	124	45	7.0	20.0	
Chloromethane	45	5.0	50	0.0	90.0	50	139	45	0.4	20.0	
1,2-Dibromoethane	50	5.0	50	0.0	100.0	78	122	47	5.6	20.0	
2-Chlorotoluene	55	5.0	50	0.0	111.0	79	122	53	4.8	20.0	
Dibromomethane	50	5.0	50	0.0	101.0	79	123	47	6.2	20.0	
1,2-Dichlorobenzene	54	5.0	50	0.0	107.0	80	119	50	6.1	20.0	
4-Chlorotoluene	61	5.0	50	0.0	121.0	78	122	58	4.3	20.0	
1,3-Dichlorobenzene	54	5.0	50	0.0	109.0	80	119	52	5.1	20.0	
1,4-Dichlorobenzene	52	5.0	50	0.0	104.0	79	118	49	6.2	20.0	
Dichlorodifluoromethane	63	5.0	50	0.0	126.0	32	152	63	1.0	20.0	
1,1-Dichloroethane	51	5.0	50	0.0	102.0	77	125	48	6.9	20.0	
1,2-Dichloroethane	49	5.0	50	0.0	98.0	73	128	47	4.7	20.0	
1,1-Dichloroethene	50	5.0	50	0.0	99.0	71	131	46	7.7	20.0	
cis-1,2-Dichloroethene	51	5.0	50	0.0	102.0	78	123	47	7.4	20.0	
trans-1,2-Dichloroethene	51	5.0	50	0.0	101.0	75	124	47	6.5	20.0	
1,2-Dichloropropane	51	5.0	50	0.0	101.0	78	122	48	5.7	20.0	
1,3-Dichloropropane	50	5.0	50	0.0	99.0	80	119	46	7.0	20.0	
2,2-Dichloropropane	51	5.0	50	0.0	102.0	60	139	47	7.7	20.0	
1,1-Dichloropropene	48	5.0	50	0.0	97.0	79	125	45	7.1	20.0	



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 10 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 16:35 **Prep Date:**
Lab ID: B21112214-002CMSD **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	48	5.0	50	0.0	96.0	75	124	46	4.4	20.0	
trans-1,3-Dichloropropene	52	5.0	50	0.0	103.0	73	127	47	9.0	20.0	
Ethylbenzene	57	5.0	50	5.7	104.0	79	121	55	4.1	20.0	
Methyl tert-butyl ether (MTBE)	53	5.0	50	0.0	105.0	71	124	48	8.7	20.0	
Methyl ethyl ketone	539	100	500	0.0	108.0	56	143	504	6.7	20.0	
Methylene chloride	47	5.0	50	0.0	94.0	74	124	45	5.0	20.0	
Styrene	55	5.0	50	0.0	110.0	78	123	52	5.3	20.0	
1,1,1,2-Tetrachloroethane	49	5.0	50	0.0	98.0	78	124	46	6.7	20.0	
1,1,2,2-Tetrachloroethane	52	5.0	50	0.0	104.0	71	121	48	6.9	20.0	
Tetrachloroethene	51	5.0	50	0.0	102.0	74	129	48	6.4	20.0	
Toluene	56	5.0	50	4.4	103.0	80	121	54	4.1	20.0	
1,1,1-Trichloroethane	50	5.0	50	0.0	100.0	74	131	46	9.0	20.0	
1,1,2-Trichloroethane	51	5.0	50	0.0	102.0	80	119	46	11.0	20.0	
Trichloroethene	48	5.0	50	0.0	97.0	79	123	46	5.1	20.0	
Trichlorofluoromethane	51	5.0	50	0.0	102.0	65	141	49	4.4	20.0	
1,2,3-Trichloropropane	48	5.0	50	0.0	96.0	73	125	46	4.5	20.0	
Vinyl chloride	52	5.0	50	0.0	104.0	58	137	51	3.1	20.0	
m+p-Xylenes	130	5.0	100	26	104.0	80	121	125	3.5	20.0	
o-Xylene	97	5.0	50	45	104.0	78	122	95	1.6	20.0	
Xylenes, Total	226	5.0	150	71	104.0	79	121	220	2.7	20.0	
Surr: 1,2-Dichloroethane-d4	102	5.0	100	0.0	102.0	81	118	0.0			
Surr: Dibromofluoromethane	102	5.0	100	0.0	102.0	80	119	0.0			
Surr: p-Bromofluorobenzene	107	5.0	100	0.0	107.0	85	114	0.0			
Surr: Toluene-d8	105	5.0	100	0.0	105.0	89	112	0.0			

Associated Samples: **B21112214-002C, B21112214-003A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 11:54 **Prep Date:**
Lab ID: CCV120521_ **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		102.0	80	120				
Bromobenzene	5.0	0.50	5.0		100.0	80	120				
Bromochloromethane	5.0	0.50	5.0		99.0	80	120				
Bromodichloromethane	5.0	0.50	5.0		100.0	80	120				
Bromoform	4.9	0.50	5.0		99.0	80	120				
Bromomethane	5.3	0.50	5.0		106.0	80	120				
Carbon tetrachloride	4.8	0.50	5.0		96.0	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	4.8	0.50	5.0		97.0	80	120				
Chloroform	4.9	0.50	5.0		99.0	80	120				
Chloromethane	5.0	0.50	5.0		99.0	80	120				
1,2-Dibromoethane	5.1	0.50	5.0		101.0	80	120				
2-Chlorotoluene	5.2	0.50	5.0		104.0	80	120				
Dibromomethane	4.9	0.50	5.0		98.0	80	120				
1,2-Dichlorobenzene	5.0	0.50	5.0		100.0	80	120				
4-Chlorotoluene	5.2	0.50	5.0		104.0	80	120				
1,3-Dichlorobenzene	5.0	0.50	5.0		101.0	80	120				
1,4-Dichlorobenzene	4.9	0.50	5.0		99.0	80	120				
Dichlorodifluoromethane	5.1	0.50	5.0		102.0	80	120				
1,1-Dichloroethane	5.0	0.50	5.0		99.0	80	120				
1,2-Dichloroethane	5.1	0.50	5.0		101.0	80	120				
1,1-Dichloroethene	4.8	0.50	5.0		95.0	80	120				
cis-1,2-Dichloroethene	5.0	0.50	5.0		99.0	80	120				
trans-1,2-Dichloroethene	4.9	0.50	5.0		98.0	80	120				
1,2-Dichloropropane	5.1	0.50	5.0		102.0	80	120				
1,3-Dichloropropane	5.1	0.50	5.0		101.0	80	120				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 11:54 **Prep Date:**
Lab ID: CCV120521_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
2,2-Dichloropropane	5.2	0.50	5.0		103.0	80	120				
1,1-Dichloropropene	4.9	0.50	5.0		98.0	80	120				
cis-1,3-Dichloropropene	5.1	0.50	5.0		103.0	80	120				
trans-1,3-Dichloropropene	5.1	0.50	5.0		102.0	80	120				
Ethylbenzene	5.1	0.50	5.0		101.0	80	120				
Methyl tert-butyl ether (MTBE)	5.1	0.50	5.0		101.0	80	120				
Methyl ethyl ketone	54	10	50		108.0	80	120				
Methylene chloride	4.9	0.50	5.0		98.0	80	120				
Styrene	5.2	0.50	5.0		104.0	80	120				
1,1,1,2-Tetrachloroethane	4.9	0.50	5.0		97.0	80	120				
1,1,2,2-Tetrachloroethane	4.9	0.50	5.0		99.0	80	120				
Tetrachloroethene	4.8	0.50	5.0		96.0	80	120				
Toluene	5.0	0.50	5.0		101.0	80	120				
1,1,1-Trichloroethane	4.8	0.50	5.0		96.0	80	120				
1,1,2-Trichloroethane	5.0	0.50	5.0		99.0	80	120				
Trichloroethene	4.9	0.50	5.0		98.0	80	120				
Trichlorofluoromethane	4.9	0.50	5.0		97.0	80	120				
1,2,3-Trichloropropane	4.7	0.50	5.0		93.0	80	120				
Vinyl chloride	4.8	0.50	5.0		97.0	80	120				
m+p-Xylenes	10	0.50	10		103.0	80	120				
o-Xylene	5.1	0.50	5.0		102.0	80	120				
Xylenes, Total	15	0.50	15		103.0	80	120				
Surr: 1,2-Dichloroethane-d4	10	0.50	10		103.0	80	120				
Surr: Dibromofluoromethane	10	0.50	10		105.0	80	120				
Surr: p-Bromofluorobenzene	11	0.50	10		105.0	80	120				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 11:54 **Prep Date:**
Lab ID: CCV120521_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Surr: Toluene-d8	11	0.50	10		106.0	80	120				

Associated Samples: **B21112214-002C, B21112214-003A**

Run ID: Run Order: VOA5975C.I_211205A: 11 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 17:57 **Prep Date:**
Lab ID: CCV120521_Closing **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	5.2	0.50	5.0		104.0	50	150				
Bromobenzene	5.1	0.50	5.0		102.0	50	150				
Bromochloromethane	5.1	0.50	5.0		103.0	50	150				
Bromodichloromethane	5.0	0.50	5.0		100.0	50	150				
Bromoform	5.1	0.50	5.0		102.0	50	150				
Bromomethane	5.2	0.50	5.0		104.0	50	150				
Carbon tetrachloride	5.0	0.50	5.0		101.0	50	150				
Chlorobenzene	5.1	0.50	5.0		101.0	50	150				
Chlorodibromomethane	5.1	0.50	5.0		102.0	50	150				
Chloroethane	4.7	0.50	5.0		95.0	50	150				
Chloroform	5.1	0.50	5.0		101.0	50	150				
Chloromethane	4.8	0.50	5.0		96.0	50	150				
1,2-Dibromoethane	5.2	0.50	5.0		103.0	50	150				
2-Chlorotoluene	5.3	0.50	5.0		107.0	50	150				
Dibromomethane	5.1	0.50	5.0		101.0	50	150				
1,2-Dichlorobenzene	5.1	0.50	5.0		102.0	50	150				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 11 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 17:57 **Prep Date:**
Lab ID: CCV120521_Closing **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
4-Chlorotoluene	5.3	0.50	5.0		105.0	50	150				
1,3-Dichlorobenzene	5.2	0.50	5.0		103.0	50	150				
1,4-Dichlorobenzene	5.0	0.50	5.0		100.0	50	150				
Dichlorodifluoromethane	5.0	0.50	5.0		99.0	50	150				
1,1-Dichloroethane	5.1	0.50	5.0		102.0	50	150				
1,2-Dichloroethane	5.2	0.50	5.0		103.0	50	150				
1,1-Dichloroethene	5.1	0.50	5.0		101.0	50	150				
cis-1,2-Dichloroethene	5.2	0.50	5.0		104.0	50	150				
trans-1,2-Dichloroethene	5.1	0.50	5.0		102.0	50	150				
1,2-Dichloropropane	5.2	0.50	5.0		104.0	50	150				
1,3-Dichloropropane	5.2	0.50	5.0		103.0	50	150				
2,2-Dichloropropane	5.1	0.50	5.0		102.0	50	150				
1,1-Dichloropropene	5.2	0.50	5.0		105.0	50	150				
cis-1,3-Dichloropropene	5.1	0.50	5.0		103.0	50	150				
trans-1,3-Dichloropropene	5.2	0.50	5.0		104.0	50	150				
Ethylbenzene	5.2	0.50	5.0		104.0	50	150				
Methyl tert-butyl ether (MTBE)	5.1	0.50	5.0		103.0	50	150				
Methyl ethyl ketone	47	10	50		95.0	50	150				
Methylene chloride	4.8	0.50	5.0		96.0	50	150				
Styrene	5.3	0.50	5.0		106.0	50	150				
1,1,1,2-Tetrachloroethane	4.9	0.50	5.0		98.0	50	150				
1,1,2,2-Tetrachloroethane	5.0	0.50	5.0		100.0	50	150				
Tetrachloroethene	5.0	0.50	5.0		101.0	50	150				
Toluene	5.2	0.50	5.0		104.0	50	150				
1,1,1-Trichloroethane	5.0	0.50	5.0		101.0	50	150				
1,1,2-Trichloroethane	5.2	0.50	5.0		104.0	50	150				
Trichloroethene	5.0	0.50	5.0		100.0	50	150				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: VOA5975C.I_211205A: 11 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371393
Method: SW8260B **Analysis Date:** 12/05/2021 17:57 **Prep Date:**
Lab ID: CCV120521_Closing **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Trichlorofluoromethane	4.9	0.50	5.0		98.0	50	150				
1,2,3-Trichloropropane	4.9	0.50	5.0		98.0	50	150				
Vinyl chloride	4.8	0.50	5.0		97.0	50	150				
m+p-Xylenes	11	0.50	10		106.0	50	150				
o-Xylene	5.3	0.50	5.0		105.0	50	150				
Xylenes, Total	16	0.50	15		105.0	50	150				
Surr: 1,2-Dichloroethane-d4	10	0.50	10		100.0	50	150				
Surr: Dibromofluoromethane	10	0.50	10		105.0	50	150				
Surr: p-Bromofluorobenzene	11	0.50	10		106.0	50	150				
Surr: Toluene-d8	11	0.50	10		106.0	50	150				

Associated Samples: **B21112214-002C, B21112214-003A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: GCFID-HP5-B_211129C: 6 **SampType:** Method Blank **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 11/30/2021 15:32 **Prep Date:** 11/29/2021 11:55
Lab ID: MB-161704 **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	0.18	0.0020	0.20		90.0	56	125				
Surr: n-Triacontane	0.084	0.0020	0.10		84.0	50	150				

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211202A: 6 **SampType:** Method Blank **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/02/2021 13:52 **Prep Date:** 11/29/2021 11:55
Lab ID: MB-161704 **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (SGT-C10 to C24)	ND	0.15									
Oil Range Hydrocarbons (SGT-C24 to C40)	ND	0.15									
Total Extractable Hydrocarbons (SGT)	ND	0.15									
Surr: o-Terphenyl (SGT)	0.19	0.0020	0.20		94.0	56	125				
Surr: n-Triacontane (SGT)	0.084	0.0020	0.10		84.0	50	150				

Associated Samples: **B21112214-002B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: GCFID-HP5-B_211129C: 4 **SampType:** Laboratory Control Sample **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 11/30/2021 14:07 **Prep Date:** 11/29/2021 11:55
Lab ID: LCS-161704 **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		86.0	36	132				
Total Extractable Hydrocarbons	14	0.30	15		92.0	60	132				
Surr: o-Terphenyl	0.19	0.0020	0.20		97.0	56	125				

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211129C: 5 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 11/30/2021 14:49 **Prep Date:** 11/29/2021 11:55
Lab ID: LCSD-161704 **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		86.0	36	132	13	0.2	20.0	
Total Extractable Hydrocarbons	14	0.30	15		92.0	60	132	14	0.2	20.0	
Surr: o-Terphenyl	0.20	0.0020	0.20		100.0	56	125	0.0			

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211129C: 31 **SampType:** Laboratory Control Sample **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/01/2021 19:35 **Prep Date:** 11/29/2021 11:55
Lab ID: LCS-161704-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)	4.6	0.30	5.0		92.0	41	113				
Surr: n-Triacontane	0.086	0.0020	0.10		86.0	50	150				

Associated Samples: **B21112214-002B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: GCFID-HP5-B_211129C: 32 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/01/2021 21:00 **Prep Date:** 11/29/2021 11:55
Lab ID: LCSD-161704-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)	4.3	0.30	5.0		86.0	41	113	4.6	6.7	20.0	
Surr: n-Triacontane	0.080	0.0020	0.10		80.0	50	150	0.0			

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211202A: 4 **SampType:** Laboratory Control Sample **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/02/2021 12:26 **Prep Date:** 11/29/2021 11:55
Lab ID: LCS-161704 **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (SGT-C10 to C24)	13	0.30	15		83.0	36	132				
Total Extractable Hydrocarbons (SGT)	13	0.30	15		89.0	60	132				
Surr: o-Terphenyl (SGT)	0.19	0.0020	0.20		97.0	56	125				

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211202A: 5 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/02/2021 13:09 **Prep Date:** 11/29/2021 11:55
Lab ID: LCSD-161704 **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (SGT-C10 to C24)	13	0.30	15		86.0	36	132	13	2.5	20.0	
Total Extractable Hydrocarbons (SGT)	14	0.30	15		91.0	60	132	13	2.2	20.0	
Surr: o-Terphenyl (SGT)	0.21	0.0020	0.20		103.0	56	125	0.0			

Associated Samples: **B21112214-002B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: GCFID-HP5-B_211202A: 18 **SampType:** Laboratory Control Sample **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/03/2021 02:01 **Prep Date:** 11/29/2021 11:55
Lab ID: LCS-161704-RRO **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH (SGT-Oil Range)	4.7	0.30	5.0		94.0	41	113				
Surr: n-Triacontane (SGT)	0.087	0.0020	0.10		87.0	50	150				

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211202A: 19 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/03/2021 03:27 **Prep Date:** 11/29/2021 11:55
Lab ID: LCSD-161704-RRO **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH (SGT-Oil Range)	4.4	0.30	5.0		89.0	41	113	4.7	6.1	20.0	
Surr: n-Triacontane (SGT)	0.080	0.0020	0.10		80.0	50	150	0.0			

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211129C: 27 **SampType:** Sample Matrix Spike **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/01/2021 13:46 **Prep Date:** 11/30/2021 08:29
Lab ID: B21112214-002BMS-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)	7.9	0.88	4.9	1.9	121.0	41	113				S
Surr: n-Triacontane	0.087	0.0059	0.098	0.0	89.0	50	150				

Associated Samples: **B21112214-002B**

- TEH (Oil Range) Matrix Spike recovery was slightly above quality control limits.



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: GCFID-HP5-B_211129C: 26 **SampType:** Sample Duplicate **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/01/2021 13:04 **Prep Date:** 11/30/2021 08:29
Lab ID: B21112214-002BMS **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)	520	24						714	31.0	20.0	R
Total Extractable Hydrocarbons	536	24						737	32.0	20.0	R
Surr: o-Terphenyl	0.18	0.16	0.20		91.0	50	150	0.0			

Associated Samples: **B21112214-002B**

- Because the sample amount was significantly higher than the spike amount for some analytes, the Matrix Spike sample is calculated as a Duplicate sample based on the spike amount added plus the original sample concentration for those analytes. Higher than normal RPD values appear to be sample matrix related and may indicate a non-homogenous sample matrix.

Run ID: Run Order: GCFID-HP5-B_211202A: 16 **SampType:** Sample Duplicate **Batch ID:** 161704
Method: SW8015C **Analysis Date:** 12/02/2021 23:09 **Prep Date:** 11/30/2021 08:29
Lab ID: B21112214-002BMS **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (SGT-C10 to C24)	550	15						698	24.0	20.0	R
Total Extractable Hydrocarbons (SGT)	566	15						718	24.0	20.0	R
Surr: o-Terphenyl (SGT)	0.19	0.099	0.20		94.0	56	125	0.0			

Associated Samples: **B21112214-002B**

- Because the sample amount was significantly higher than the spike amount for some analytes, the MS spike sample is calculated as a Duplicate sample based on the spike amount added plus the original sample concentration for those analytes. Higher than normal RPD values appear to be sample matrix related and may indicate a non-homogenous sample matrix.



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: PE 1_211202A: 4 **SampType:** Method Blank **Batch ID:** R371174
Method: SW8015C **Analysis Date:** 12/02/2021 13:34 **Prep Date:**
Lab ID: MBLK_1202PE104r **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		82.0	70	130				

Associated Samples: **B21112214-002D, B21112214-003B**

Run ID: Run Order: PE 1_211202A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R371174
Method: SW8015C **Analysis Date:** 12/02/2021 12:59 **Prep Date:**
Lab ID: LCS_1202PE103r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	145	20	170		85.0	78	122				
Total Purgeable Hydrocarbons	171	20	200		85.0	70	130				
Surr: Trifluorotoluene	22	1.0	25		87.0	70	130				

Associated Samples: **B21112214-002D, B21112214-003B**

Run ID: Run Order: PE 1_211202A: 7 **SampType:** Sample Matrix Spike **Batch ID:** R371174
Method: SW8015C **Analysis Date:** 12/02/2021 15:54 **Prep Date:**
Lab ID: B21112214-002DMS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	1730	200	1700	253	87.0	78	122				
Total Purgeable Hydrocarbons	3840	200	2000	2270	78.0	70	130				
Surr: Trifluorotoluene	226	10	250	0.0	90.0	70	130				

Associated Samples: **B21112214-002D, B21112214-003B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: PE 1_211202A: 8 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R371174
Method: SW8015C **Analysis Date:** 12/02/2021 16:29 **Prep Date:**
Lab ID: B21112214-002DMSD **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	1730	200	1700	253	87.0	78	122	1730	0.2	20.0	
Total Purgeable Hydrocarbons	3830	200	2000	2270	78.0	70	130	3840	0.2	20.0	
Surr: Trifluorotoluene	225	10	250	0.0	90.0	70	130	0.0			

Associated Samples: **B21112214-002D, B21112214-003B**

Run ID: Run Order: GCFID-HP5-B_211129C: 10 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371049
Method: SW8015C **Analysis Date:** 11/30/2021 19:07 **Prep Date:**
Lab ID: CCV_1129HP548r-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		99.0	80	120				
Surr: n-Triacontane	0.21	0.0020	0.20		105.0	80	120				

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211129C: 11 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371049
Method: SW8015C **Analysis Date:** 11/30/2021 19:50 **Prep Date:**
Lab ID: CCV_1129HP549r **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		101.0	80	120				
Total Extractable Hydrocarbons	16	0.30	15		104.0	80	120				
Surr: o-Terphenyl	0.21	0.0020	0.20		103.0	80	120				

Associated Samples: **B21112214-002B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: GCFID-HP5-B_211129C: 19 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371049
Method: SW8015C **Analysis Date:** 12/01/2021 06:40 **Prep Date:**
Lab ID: CCV_1129HP564r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.2	0.30	5.0		103.0	80	120				
Surr: n-Triacontane	0.21	0.0020	0.20		105.0	80	120				

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211129C: 20 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371049
Method: SW8015C **Analysis Date:** 12/01/2021 07:23 **Prep Date:**
Lab ID: CCV_1129HP565r **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		103.0	80	120				
Total Extractable Hydrocarbons	16	0.30	15		107.0	80	120				
Surr: o-Terphenyl	0.21	0.0020	0.20		105.0	80	120				

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211129C: 29 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371049
Method: SW8015C **Analysis Date:** 12/01/2021 17:26 **Prep Date:**
Lab ID: CCV_1129HP578r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	4.8	0.30	5.0		96.0	80	120				
Surr: n-Triacontane	0.20	0.0020	0.20		99.0	80	120				

Associated Samples: **B21112214-002B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: PE 1_211202A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371174
Method: SW8015C **Analysis Date:** 12/02/2021 12:24 **Prep Date:**
Lab ID: CCV_1202PE102r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	162	20	168		96.0	80	120				
Total Purgeable Hydrocarbons	191	20	200		96.0	80	120				
Surr: Trifluorotoluene	23	1.0	25		93.0	80	120				

Associated Samples: **B21112214-002D, B21112214-003B**

Run ID: Run Order: PE 1_211202A: 10 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371174
Method: SW8015C **Analysis Date:** 12/02/2021 18:14 **Prep Date:**
Lab ID: CCV_1202PE112r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	155	20				80	120				
Total Purgeable Hydrocarbons	184	20	200		92.0	80	120				
Surr: Trifluorotoluene	23	1.0	25		90.0	80	120				

Associated Samples: **B21112214-002D, B21112214-003B**

Run ID: Run Order: GCFID-HP5-B_211202A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371199
Method: SW8015C **Analysis Date:** 12/02/2021 10:18 **Prep Date:**
Lab ID: CCV_1202HP505r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	4.7	0.30	5.0		94.0	80	120				
Surr: n-Triacontane	0.20	0.0020	0.20		101.0	80	120				

Associated Samples: **B21112214-002B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: GCFID-HP5-B_211202A: 3 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371199
Method: SW8015C **Analysis Date:** 12/02/2021 11:01 **Prep Date:**
Lab ID: CCV_1202HP506r **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)	16	0.30	15		104.0	80	120				
Total Extractable Hydrocarbons	16	0.30	15		107.0	80	120				
Surr: o-Terphenyl	0.21	0.0020	0.20		105.0	80	120				

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211202A: 14 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371199
Method: SW8015C **Analysis Date:** 12/02/2021 21:00 **Prep Date:**
Lab ID: CCV_1202HP520r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	4.8	0.30	5.0		96.0	80	120				
Surr: n-Triacontane	0.21	0.0020	0.20		103.0	80	120				

Associated Samples: **B21112214-002B**

Run ID: Run Order: GCFID-HP5-B_211202A: 15 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371199
Method: SW8015C **Analysis Date:** 12/02/2021 21:43 **Prep Date:**
Lab ID: CCV_1202HP521r **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		101.0	80	120				
Total Extractable Hydrocarbons	16	0.30	15		105.0	80	120				
Surr: o-Terphenyl	0.21	0.0020	0.20		103.0	80	120				

Associated Samples: **B21112214-002B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 12
Method: SW8270C
Lab ID: MB-161693

SampType: Method Blank
Analysis Date: 11/30/2021 19:12
Units: ug/L

Batch ID: 161693
Prep Date: 11/29/2021 09:39
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									
1-Methylnaphthalene	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	5.0									
2,4-Dinitrotoluene	ND	5.0									
2,6-Dinitrotoluene	ND	5.0									
2-Chloronaphthalene	ND	5.0									
2-Chlorophenol	ND	5.0									
2-Methylnaphthalene	ND	5.0									
2-Nitrophenol	ND	5.0									
3,3'-Dichlorobenzidine	ND	5.0									
4,6-Dinitro-2-methylphenol	ND	5.0									
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	5.0									
Acenaphthene	ND	5.0									
Acenaphthylene	ND	5.0									
Anthracene	ND	5.0									
Azobenzene	ND	5.0									



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 12 **SampType:** Method Blank **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 19:12 **Prep Date:** 11/29/2021 09:39
Lab ID: MB-161693 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzidine	ND	6.7									
Benzo(a)anthracene	ND	5.0									
Benzo(a)pyrene	ND	5.0									
Benzo(b)fluoranthene	ND	5.0									
Benzo(g,h,i)perylene	ND	5.0									
Benzo(k)fluoranthene	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									
Chrysene	ND	5.0									
Dibenzo(a,h)anthracene	ND	5.0									
Diethyl phthalate	ND	5.0									
Dimethyl phthalate	ND	5.0									
Di-n-butyl phthalate	ND	5.0									
Di-n-octyl phthalate	ND	5.0									
Fluoranthene	ND	5.0									
Fluorene	ND	5.0									
Hexachlorobenzene	ND	5.0									
Hexachlorobutadiene	ND	5.0									
Hexachlorocyclopentadiene	ND	5.0									
Hexachloroethane	ND	5.0									
Indeno(1,2,3-cd)pyrene	ND	5.0									
Isophorone	ND	5.0									
m+p-Cresols	ND	5.0									
Naphthalene	ND	5.0									



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 12 **SampType:** Method Blank **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 19:12 **Prep Date:** 11/29/2021 09:39
Lab ID: MB-161693 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Nitrobenzene	ND	5.0									
n-Nitrosodimethylamine	ND	5.0									
n-Nitroso-di-n-propylamine	ND	5.0									
n-Nitrosodiphenylamine	ND	5.0									
o-Cresol	ND	5.0									
Pentachlorophenol	ND	5.0									
Phenanthrene	ND	5.0									
Phenol	ND	5.0									
Pyrene	ND	5.0									
Pyridine	ND	5.0									
Surr: 2,4,6-Tribromophenol	136	5.0	200		68.0	43	140				
Surr: 2-Fluorobiphenyl	35	5.0	100		35.0	44	119				S
Surr: 2-Fluorophenol	74	5.0	200		37.0	19	119				
Surr: Nitrobenzene-d5	57	5.0	100		57.0	44	120				
Surr: Phenol-d5	67	5.0	200		33.0	10	65				
Surr: Terphenyl-d14	91	5.0	100		91.0	50	134				

Associated Samples: **B21112214-002A**

Run ID: Run Order: SV5973N.I_211130A: 13 **SampType:** Laboratory Control Sample **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 19:45 **Prep Date:** 11/29/2021 09:39
Lab ID: LCS-161693 **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	60	10	100		60.0	29	116				
1,2-Dichlorobenzene	55	10	100		55.0	32	111				
1,3-Dichlorobenzene	58	10	100		58.0	28	110				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 13 **SampType:** Laboratory Control Sample **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 19:45 **Prep Date:** 11/29/2021 09:39
Lab ID: LCS-161693 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	59	10	100		59.0	29	112				
1-Methylnaphthalene	73	10	100		73.0	41	119				
2,4,5-Trichlorophenol	83	10	100		83.0	53	123				
2,4,6-Trichlorophenol	80	10	100		80.0	50	125				
2,4-Dichlorophenol	81	10	100		81.0	47	121				
2,4-Dimethylphenol	79	10	100		79.0	31	124				
2,4-Dinitrophenol	77	10	100		77.0	23	142				
2,4-Dinitrotoluene	82	10	100		82.0	57	128				
2,6-Dinitrotoluene	79	10	100		79.0	50	118				
2-Chloronaphthalene	71	10	100		71.0	40	116				
2-Chlorophenol	75	10	100		75.0	38	117				
2-Methylnaphthalene	72	10	100		72.0	40	121				
2-Nitrophenol	80	10	100		80.0	47	123				
3,3'-Dichlorobenzidine	68	10	100		68.0	27	129				
4,6-Dinitro-2-methylphenol	74	10	100		74.0	44	137				
4-Bromophenyl phenyl ether	78	10	100		78.0	55	124				
4-Chloro-3-methylphenol	83	10	100		83.0	52	119				
4-Chlorophenol	77	10	100		77.0	41	81				
4-Chlorophenyl phenyl ether	79	10	100		79.0	53	121				
4-Nitrophenol	38	10	100		38.0	15	36				S
Acenaphthene	83	10	100		83.0	47	122				
Acenaphthylene	77	10	100		77.0	41	130				
Anthracene	84	10	100		84.0	57	123				
Azobenzene	76	10	100		76.0	61	116				
Benzidine	64	10	100		64.0	10	100				
Benzo(a)anthracene	82	10	100		82.0	58	125				
Benzo(a)pyrene	78	10	100		78.0	54	128				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 13 **SampType:** Laboratory Control Sample **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 19:45 **Prep Date:** 11/29/2021 09:39
Lab ID: LCS-161693 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	82	10	100		82.0	53	131				
Benzo(g,h,i)perylene	81	10	100		81.0	50	134				
Benzo(k)fluoranthene	79	10	100		79.0	57	129				
bis(-2-chloroethoxy)Methane	85	10	100		85.0	48	120				
bis(-2-chloroethyl)Ether	77	10	100		77.0	43	118				
bis(2-chloroisopropyl)Ether	61	10	100		61.0	37	130				
bis(2-ethylhexyl)Phthalate	92	10	100		92.0	55	135				
Butylbenzylphthalate	87	10	100		87.0	53	134				
Chrysene	80	10	100		80.0	59	123				
Dibenzo(a,h)anthracene	87	10	100		87.0	51	134				
Diethyl phthalate	92	10	100		92.0	56	125				
Dimethyl phthalate	88	10	100		88.0	45	127				
Di-n-butyl phthalate	94	10	100		94.0	59	127				
Di-n-octyl phthalate	92	10	100		92.0	51	140				
Fluoranthene	81	10	100		81.0	57	128				
Fluorene	83	10	100		83.0	52	124				
Hexachlorobenzene	77	10	100		77.0	53	125				
Hexachlorobutadiene	56	10	100		56.0	22	124				
Hexachlorocyclopentadiene	61	10	100		61.0	39	91				
Hexachloroethane	53	10	100		53.0	21	115				
Indeno(1,2,3-cd)pyrene	81	10	100		81.0	52	134				
Isophorone	79	10	100		79.0	42	124				
m+p-Cresols	71	10	100		71.0	29	110				
Naphthalene	74	10	100		74.0	40	121				
Nitrobenzene	68	10	100		68.0	45	121				
n-Nitrosodimethylamine	53	10	100		53.0	20	45				S
n-Nitroso-di-n-propylamine	83	10	100		83.0	49	119				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 13 **SampType:** Laboratory Control Sample **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 19:45 **Prep Date:** 11/29/2021 09:39
Lab ID: LCS-161693 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
n-Nitrosodiphenylamine	95	10	100		95.0	51	123				
o-Cresol	74	10	100		74.0	30	117				
Pentachlorophenol	86	10	100		86.0	35	138				
Phenanthrene	83	10	100		83.0	59	120				
Phenol	49	10	100		49.0	37	75				
Pyrene	82	10	100		82.0	57	126				
Pyridine	38	10	100		38.0	16	45				
Surr: 2,4,6-Tribromophenol	166	10	200		83.0	43	140				
Surr: 2-Fluorobiphenyl	63	10	100		63.0	44	119				
Surr: 2-Fluorophenol	101	10	200		50.0	19	119				
Surr: Nitrobenzene-d5	71	10	100		71.0	44	120				
Surr: Phenol-d5	92	10	200		46.0	10	65				
Surr: Terphenyl-d14	94	10	100		94.0	50	134				

Associated Samples: **B21112214-002A**

Run ID: Run Order: SV5973N.I_211130A: 14 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 20:17 **Prep Date:** 11/29/2021 09:39
Lab ID: LCSD-161693 **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	62	10	100		62.0	29	116	60	3.3	20.0	
1,2-Dichlorobenzene	56	10	100		56.0	32	111	55	1.1	20.0	
1,3-Dichlorobenzene	58	10	100		58.0	28	110	58	0.2	20.0	
1,4-Dichlorobenzene	59	10	100		59.0	29	112	59	0.4	20.0	
1-Methylnaphthalene	71	10	100		71.0	41	119	73	2.6	20.0	
2,4,5-Trichlorophenol	82	10	100		82.0	53	123	83	0.8	20.0	



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 14 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 20:17 **Prep Date:** 11/29/2021 09:39
Lab ID: LCSD-161693 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
2,4,6-Trichlorophenol	83	10	100		83.0	50	125	80	3.1	20.0	
2,4-Dichlorophenol	82	10	100		82.0	47	121	81	1.0	20.0	
2,4-Dimethylphenol	79	10	100		79.0	31	124	79	0.3	20.0	
2,4-Dinitrophenol	76	10	100		76.0	23	142	77	1.0	20.0	
2,4-Dinitrotoluene	81	10	100		81.0	57	128	82	1.1	20.0	
2,6-Dinitrotoluene	80	10	100		80.0	50	118	79	1.4	20.0	
2-Chloronaphthalene	73	10	100		73.0	40	116	71	2.7	20.0	
2-Chlorophenol	75	10	100		75.0	38	117	75	0.9	20.0	
2-Methylnaphthalene	71	10	100		71.0	40	121	72	1.6	20.0	
2-Nitrophenol	81	10	100		81.0	47	123	80	1.3	20.0	
3,3'-Dichlorobenzidine	70	10	100		70.0	27	129	68	3.2	20.0	
4,6-Dinitro-2-methylphenol	78	10	100		78.0	44	137	74	5.3	20.0	
4-Bromophenyl phenyl ether	80	10	100		80.0	55	124	78	3.5	20.0	
4-Chloro-3-methylphenol	83	10	100		83.0	52	119	83	0.1	20.0	
4-Chlorophenol	76	10	100		76.0	41	81	77	1.5	20.0	
4-Chlorophenyl phenyl ether	80	10	100		80.0	53	121	79	1.8	20.0	
4-Nitrophenol	39	10	100		39.0	15	36	38	4.3	20.0	S
Acenaphthene	84	10	100		84.0	47	122	83	0.3	20.0	
Acenaphthylene	76	10	100		76.0	41	130	77	1.3	20.0	
Anthracene	84	10	100		84.0	57	123	84	0.0	20.0	
Azobenzene	79	10	100		79.0	61	116	76	3.2	20.0	
Benzidine	59	10	100		59.0	10	100	64	7.4	20.0	
Benzo(a)anthracene	85	10	100		85.0	58	125	82	3.1	20.0	
Benzo(a)pyrene	78	10	100		78.0	54	128	78	0.1	20.0	
Benzo(b)fluoranthene	82	10	100		82.0	53	131	82	0.3	20.0	
Benzo(g,h,i)perylene	79	10	100		79.0	50	134	81	2.2	20.0	
Benzo(k)fluoranthene	77	10	100		77.0	57	129	79	1.7	20.0	



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 14 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 20:17 **Prep Date:** 11/29/2021 09:39
Lab ID: LCSD-161693 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
bis(-2-chloroethoxy)Methane	82	10	100		82.0	48	120	85	2.6	20.0	
bis(-2-chloroethyl)Ether	75	10	100		75.0	43	118	77	2.3	20.0	
bis(2-chloroisopropyl)Ether	64	10	100		64.0	37	130	61	4.1	20.0	
bis(2-ethylhexyl)Phthalate	89	10	100		89.0	55	135	92	3.2	20.0	
Butylbenzylphthalate	92	10	100		92.0	53	134	87	5.7	20.0	
Chrysene	82	10	100		82.0	59	123	80	2.0	20.0	
Dibenzo(a,h)anthracene	86	10	100		86.0	51	134	87	1.8	20.0	
Diethyl phthalate	99	10	100		99.0	56	125	92	7.1	20.0	
Dimethyl phthalate	89	10	100		89.0	45	127	88	1.5	20.0	
Di-n-butyl phthalate	98	10	100		98.0	59	127	94	4.9	20.0	
Di-n-octyl phthalate	88	10	100		88.0	51	140	92	5.0	20.0	
Fluoranthene	83	10	100		83.0	57	128	81	2.4	20.0	
Fluorene	81	10	100		81.0	52	124	83	2.1	20.0	
Hexachlorobenzene	82	10	100		82.0	53	125	77	7.2	20.0	
Hexachlorobutadiene	59	10	100		59.0	22	124	56	5.0	20.0	
Hexachlorocyclopentadiene	65	10	100		65.0	39	91	61	7.7	20.0	
Hexachloroethane	52	10	100		52.0	21	115	53	2.5	20.0	
Indeno(1,2,3-cd)pyrene	78	10	100		78.0	52	134	81	3.9	20.0	
Isophorone	80	10	100		80.0	42	124	79	1.9	20.0	
m+p-Cresols	69	10	100		69.0	29	110	71	2.4	20.0	
Naphthalene	71	10	100		71.0	40	121	74	3.5	20.0	
Nitrobenzene	68	10	100		68.0	45	121	68	0.4	20.0	
n-Nitrosodimethylamine	60	10	100		60.0	20	45	53	12.0	20.0	S
n-Nitroso-di-n-propylamine	83	10	100		83.0	49	119	83	0.4	20.0	
n-Nitrosodiphenylamine	94	10	100		94.0	51	123	95	1.7	20.0	
o-Cresol	74	10	100		74.0	30	117	74	0.5	20.0	
Pentachlorophenol	91	10	100		91.0	35	138	86	4.9	20.0	



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 14 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 20:17 **Prep Date:** 11/29/2021 09:39
Lab ID: LCSD-161693 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Phenanthrene	84	10	100		84.0	59	120	83	0.7	20.0	
Phenol	50	10	100		50.0	37	75	49	2.9	20.0	
Pyrene	83	10	100		83.0	57	126	82	1.1	20.0	
Pyridine	36	10	100		36.0	16	45	38	6.2	20.0	
Surr: 2,4,6-Tribromophenol	170	10	200		85.0	43	140	0.0	0.0		
Surr: 2-Fluorobiphenyl	52	10	100		52.0	44	119	0.0	0.0		
Surr: 2-Fluorophenol	100	10	200		50.0	19	119	0.0	0.0		
Surr: Nitrobenzene-d5	71	10	100		71.0	44	120	0.0	0.0		
Surr: Phenol-d5	93	10	200		46.0	10	65	0.0	0.0		
Surr: Terphenyl-d14	93	10	100		93.0	50	134	0.0	0.0		

Associated Samples: **B21112214-002A**

- 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: SV5973N.I_211130A: 16 **SampType:** Sample Matrix Spike **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 21:22 **Prep Date:** 11/29/2021 09:41
Lab ID: B21112101-001AMS **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	62	10	104	0.0	59.0	29	116				
1,2-Dichlorobenzene	50	10	104	0.0	48.0	32	111				
1,3-Dichlorobenzene	48	10	104	0.0	47.0	28	110				
1,4-Dichlorobenzene	49	10	104	0.0	47.0	29	112				
1-Methylnaphthalene	72	10	104	0.0	69.0	41	119				
2,4,5-Trichlorophenol	73	10	104	0.0	70.0	53	123				
2,4,6-Trichlorophenol	72	10	104	0.0	70.0	50	125				
2,4-Dichlorophenol	70	10	104	0.0	68.0	47	121				
2,4-Dimethylphenol	64	10	104	0.0	62.0	31	124				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 16 **SampType:** Sample Matrix Spike **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 21:22 **Prep Date:** 11/29/2021 09:41
Lab ID: B21112101-001AMS **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
2,4-Dinitrophenol	67	10	104	0.0	64.0	23	142				
2,4-Dinitrotoluene	84	10	104	0.0	81.0	57	128				
2,6-Dinitrotoluene	73	10	104	0.0	70.0	50	118				
2-Chloronaphthalene	74	10	104	0.0	71.0	40	116				
2-Chlorophenol	66	10	104	0.0	63.0	38	117				
2-Methylnaphthalene	73	10	104	0.0	70.0	40	121				
2-Nitrophenol	72	10	104	0.0	69.0	47	123				
3,3'-Dichlorobenzidine	72	10	104	0.0	69.0	27	129				
4,6-Dinitro-2-methylphenol	75	10	104	0.0	72.0	44	137				
4-Bromophenyl phenyl ether	77	10	104	0.0	74.0	55	124				
4-Chloro-3-methylphenol	73	10	104	0.0	70.0	52	119				
4-Chlorophenol	65	10	104	0.0	62.0	41	81				
4-Chlorophenyl phenyl ether	80	10	104	0.0	77.0	53	121				
4-Nitrophenol	41	10	104	0.0	39.0	15	36				S
Acenaphthene	82	10	104	0.0	79.0	47	122				
Acenaphthylene	79	10	104	0.0	76.0	41	130				
Anthracene	85	10	104	0.0	82.0	57	123				
Azobenzene	80	10	104	0.0	77.0	61	116				
Benzidine	17	10	104	0.0	17.0	10	100				
Benzo(a)anthracene	87	10	104	0.0	84.0	58	125				
Benzo(a)pyrene	81	10	104	0.0	78.0	54	128				
Benzo(b)fluoranthene	85	10	104	0.0	82.0	53	131				
Benzo(g,h,i)perylene	84	10	104	0.0	80.0	50	134				
Benzo(k)fluoranthene	83	10	104	0.0	80.0	57	129				
bis(-2-chloroethoxy)Methane	75	10	104	0.0	72.0	48	120				
bis(-2-chloroethyl)Ether	66	10	104	0.0	64.0	43	118				
bis(2-chloroisopropyl)Ether	56	10	104	0.0	54.0	37	130				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 16 **SampType:** Sample Matrix Spike **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 21:22 **Prep Date:** 11/29/2021 09:41
Lab ID: B21112101-001AMS **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
bis(2-ethylhexyl)Phthalate	89	10	104	0.0	86.0	55	135				
Butylbenzylphthalate	91	10	104	0.0	87.0	53	134				
Chrysene	87	10	104	0.0	84.0	59	123				
Dibenzo(a,h)anthracene	92	10	104	0.0	89.0	51	134				
Diethyl phthalate	94	10	104	0.0	90.0	56	125				
Dimethyl phthalate	89	10	104	0.0	85.0	45	127				
Di-n-butyl phthalate	98	10	104	0.0	94.0	59	127				
Di-n-octyl phthalate	86	10	104	0.0	83.0	51	140				
Fluoranthene	87	10	104	0.0	83.0	57	128				
Fluorene	83	10	104	0.0	80.0	52	124				
Hexachlorobenzene	79	10	104	0.0	76.0	53	125				
Hexachlorobutadiene	55	10	104	0.0	53.0	22	124				
Hexachlorocyclopentadiene	64	10	104	0.0	62.0	39	91				
Hexachloroethane	44	10	104	0.0	43.0	21	115				
Indeno(1,2,3-cd)pyrene	83	10	104	0.0	80.0	52	134				
Isophorone	72	10	104	0.0	69.0	42	124				
m+p-Cresols	58	10	104	0.0	55.0	29	110				
Naphthalene	70	10	104	0.0	67.0	40	121				
Nitrobenzene	60	10	104	0.0	57.0	45	121				
n-Nitrosodimethylamine	39	10	104	0.0	37.0	20	45				
n-Nitroso-di-n-propylamine	72	10	104	0.0	69.0	49	119				
n-Nitrosodiphenylamine	100	10	104	0.0	96.0	51	123				
o-Cresol	60	10	104	0.0	57.0	30	117				
Pentachlorophenol	85	10	104	0.0	82.0	35	138				
Phenanthrene	86	10	104	0.0	83.0	59	120				
Phenol	41	10	104	0.0	39.0	37	75				
Pyrene	88	10	104	0.0	84.0	57	126				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211130A: 16 **SampType:** Sample Matrix Spike **Batch ID:** 161693
Method: SW8270C **Analysis Date:** 11/30/2021 21:22 **Prep Date:** 11/29/2021 09:41
Lab ID: B21112101-001AMS **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Pyridine	24	10	104	0.0	23.0	16	45				
Surr: 2,4,6-Tribromophenol	163	10	208	0.0	78.0	43	140				
Surr: 2-Fluorobiphenyl	65	10	104	0.0	63.0	44	119				
Surr: 2-Fluorophenol	83	10	208	0.0	40.0	19	119				
Surr: Nitrobenzene-d5	65	10	104	0.0	62.0	44	120				
Surr: Phenol-d5	79	10	208	0.0	38.0	10	65				
Surr: Terphenyl-d14	100	10	104	0.0	96.0	50	134				

Associated Samples: **B21112214-002A**

Run ID: Run Order: SV5973N.I_211202A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371189
Method: SW8270C **Analysis Date:** 12/02/2021 16:15 **Prep Date:**
Lab ID: 02-Dec-21_CCV_2 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	77	10	75		103.0	80	120				
1,2-Dichlorobenzene	73	10	75		97.0	80	120				
1,3-Dichlorobenzene	77	10	75		102.0	80	120				
1,4-Dichlorobenzene	74	10	75		99.0	80	120				
1-Methylnaphthalene	76	10	75		102.0	80	120				
2,4,5-Trichlorophenol	67	10	75		90.0	80	120				
2,4,6-Trichlorophenol	66	10	75		88.0	80	120				
2,4-Dichlorophenol	72	10	75		96.0	80	120				
2,4-Dimethylphenol	76	10	75		101.0	80	120				
2,4-Dinitrophenol	77	10	75		103.0	80	120				
2,4-Dinitrotoluene	74	10	75		99.0	80	120				
2,6-Dinitrotoluene	76	10	75		101.0	80	120				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211202A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371189
Method: SW8270C **Analysis Date:** 12/02/2021 16:15 **Prep Date:**
Lab ID: 02-Dec-21_CCV_2 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
2-Chloronaphthalene	74	10	75		99.0	80	120				
2-Chlorophenol	68	10	75		91.0	80	120				
2-Methylnaphthalene	76	10	75		102.0	80	120				
2-Nitrophenol	81	10	75		108.0	80	120				
3,3'-Dichlorobenzidine	80	10	75		107.0	80	120				
4,6-Dinitro-2-methylphenol	78	10	75		104.0	80	120				
4-Bromophenyl phenyl ether	72	10	75		95.0	80	120				
4-Chloro-3-methylphenol	77	10	75		103.0	80	120				
4-Chlorophenol	78	10	75		104.0	80	120				
4-Chlorophenyl phenyl ether	76	10	75		101.0	80	120				
4-Nitrophenol	75	10	75		100.0	80	120				
Acenaphthene	68	10	75		91.0	80	120				
Acenaphthylene	75	10	75		100.0	80	120				
Anthracene	74	10	75		99.0	80	120				
Azobenzene	81	10	75		108.0	80	120				
Benzidine	89	10	75		119.0	80	120				
Benzo(a)anthracene	74	10	75		98.0	80	120				
Benzo(a)pyrene	72	10	75		96.0	80	120				
Benzo(b)fluoranthene	72	10	75		96.0	80	120				
Benzo(g,h,i)perylene	73	10	75		97.0	80	120				
Benzo(k)fluoranthene	71	10	75		95.0	80	120				
bis(-2-chloroethoxy)Methane	87	10	75		116.0	80	120				
bis(-2-chloroethyl)Ether	87	10	75		116.0	80	120				
bis(2-chloroisopropyl)Ether	85	10	75		113.0	80	120				
bis(2-ethylhexyl)Phthalate	82	10	75		110.0	80	120				
Butylbenzylphthalate	82	10	75		109.0	80	120				
Chrysene	73	10	75		97.0	80	120				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211202A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371189
Method: SW8270C **Analysis Date:** 12/02/2021 16:15 **Prep Date:**
Lab ID: 02-Dec-21_CCV_2 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Di-n-butyl phthalate	79	10	75		106.0	80	120				
Di-n-octyl phthalate	77	10	75		102.0	80	120				
Dibenzo(a,h)anthracene	72	10	75		97.0	80	120				
Diethyl phthalate	75	10	75		100.0	80	120				
Dimethyl phthalate	72	10	75		96.0	80	120				
Fluoranthene	73	10	75		98.0	80	120				
Fluorene	76	10	75		102.0	80	120				
Hexachlorobenzene	76	10	75		102.0	80	120				
Hexachlorobutadiene	78	10	75		104.0	80	120				
Hexachlorocyclopentadiene	71	10	75		94.0	80	120				
Hexachloroethane	84	10	75		112.0	80	120				
Indeno(1,2,3-cd)pyrene	74	10	75		99.0	80	120				
Isophorone	87	10	75		116.0	80	120				
m+p-Cresols	75	10	75		99.0	80	120				
n-Nitroso-di-n-propylamine	89	10	75		118.0	80	120				
n-Nitrosodimethylamine	99	10	75		132.0	80	120				S
n-Nitrosodiphenylamine	74	10	75		98.0	80	120				
Naphthalene	80	10	75		106.0	80	120				
Nitrobenzene	75	10	75		100.0	80	120				
o-Cresol	78	10	75		104.0	80	120				
Pentachlorophenol	72	10	75		96.0	80	120				
Phenanthrene	76	10	75		101.0	80	120				
Phenol	86	10	75		115.0	80	120				
Pyrene	73	10	75		98.0	80	120				
Pyridine	87	10	75		116.0	80	120				
Surr: 2,4,6-Tribromophenol	75	10	75		100.0	80	120				
Surr: 2-Fluorobiphenyl	68	10	75		90.0	80	120				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211202A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371189
Method: SW8270C **Analysis Date:** 12/02/2021 16:15 **Prep Date:**
Lab ID: 02-Dec-21_CCV_2 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	70	10	75		93.0	80	120				
Surr: Nitrobenzene-d5	85	10	75		113.0	80	120				
Surr: Phenol-d5	78	10	75		104.0	80	120				
Surr: Terphenyl-d14	73	10	75		97.0	80	120				

Associated Samples: **B21112214-002A**

Run ID: Run Order: SV5973N.I_211202A: 5 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371189
Method: SW8270C **Analysis Date:** 12/02/2021 17:52 **Prep Date:**
Lab ID: 02-Dec-21_CCV_5 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	82	10	75		109.0	50	150				
1,2-Dichlorobenzene	84	10	75		112.0	50	150				
1,3-Dichlorobenzene	81	10	75		108.0	50	150				
1,4-Dichlorobenzene	78	10	75		104.0	50	150				
1-Methylnaphthalene	80	10	75		106.0	50	150				
2,4,5-Trichlorophenol	81	10	75		108.0	50	150				
2,4,6-Trichlorophenol	80	10	75		106.0	50	150				
2,4-Dichlorophenol	89	10	75		118.0	50	150				
2,4-Dimethylphenol	83	10	75		111.0	50	150				
2,4-Dinitrophenol	79	10	75		105.0	50	150				
2,4-Dinitrotoluene	80	10	75		107.0	50	150				
2,6-Dinitrotoluene	79	10	75		105.0	50	150				
2-Chloronaphthalene	75	10	75		99.0	50	150				
2-Chlorophenol	88	10	75		118.0	50	150				
2-Methylnaphthalene	78	10	75		104.0	50	150				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

Run ID: Run Order: SV5973N.I_211202A: 5 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371189
Method: SW8270C **Analysis Date:** 12/02/2021 17:52 **Prep Date:**
Lab ID: 02-Dec-21_CCV_5 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
2-Nitrophenol	89	10	75		118.0	50	150				
3,3'-Dichlorobenzidine	87	10	75		117.0	50	150				
4,6-Dinitro-2-methylphenol	82	10	75		110.0	50	150				
4-Bromophenyl phenyl ether	71	10	75		95.0	50	150				
4-Chloro-3-methylphenol	87	10	75		116.0	50	150				
4-Chlorophenol	84	10	75		112.0	50	150				
4-Chlorophenyl phenyl ether	78	10	75		104.0	50	150				
4-Nitrophenol	90	10	75		120.0	50	150				
Acenaphthene	78	10	75		104.0	50	150				
Acenaphthylene	79	10	75		105.0	50	150				
Anthracene	82	10	75		110.0	50	150				
Azobenzene	89	10	75		118.0	50	150				
Benzidine	89	10	75		118.0	50	150				
Benzo(a)anthracene	77	10	75		103.0	50	150				
Benzo(a)pyrene	80	10	75		106.0	50	150				
Benzo(b)fluoranthene	80	10	75		106.0	50	150				
Benzo(g,h,i)perylene	84	10	75		112.0	50	150				
Benzo(k)fluoranthene	78	10	75		104.0	50	150				
bis(-2-chloroethoxy)Methane	92	10	75		122.0	50	150				
bis(-2-chloroethyl)Ether	87	10	75		116.0	50	150				
bis(2-chloroisopropyl)Ether	88	10	75		117.0	50	150				
bis(2-ethylhexyl)Phthalate	87	10	75		116.0	50	150				
Butylbenzylphthalate	87	10	75		116.0	50	150				
Chrysene	77	10	75		103.0	50	150				
Di-n-butyl phthalate	86	10	75		114.0	50	150				
Di-n-octyl phthalate	86	10	75		114.0	50	150				
Dibenzo(a,h)anthracene	81	10	75		108.0	50	150				



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Method: SW8270C **Analysis Date:** 12/02/2021 17:52 **Prep Date:**
Lab ID: 02-Dec-21_CCV_5 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diethyl phthalate	82	10	75		109.0	50	150				
Dimethyl phthalate	77	10	75		103.0	50	150				
Fluoranthene	77	10	75		103.0	50	150				
Fluorene	79	10	75		105.0	50	150				
Hexachlorobenzene	76	10	75		102.0	50	150				
Hexachlorobutadiene	80	10	75		106.0	50	150				
Hexachlorocyclopentadiene	77	10	75		103.0	50	150				
Hexachloroethane	88	10	75		117.0	50	150				
Indeno(1,2,3-cd)pyrene	83	10	75		110.0	50	150				
Isophorone	90	10	75		119.0	50	150				
m+p-Cresols	86	10	75		115.0	50	150				
n-Nitroso-di-n-propylamine	89	10	75		119.0	50	150				
n-Nitrosodimethylamine	97	10	75		130.0	50	150				
n-Nitrosodiphenylamine	78	10	75		104.0	50	150				
Naphthalene	83	10	75		111.0	50	150				
Nitrobenzene	80	10	75		107.0	50	150				
o-Cresol	90	10	75		120.0	50	150				
Pentachlorophenol	83	10	75		110.0	50	150				
Phenanthrene	78	10	75		104.0	50	150				
Phenol	99	10	75		132.0	50	150				
Pyrene	75	10	75		100.0	50	150				
Pyridine	87	10	75		116.0	50	150				
Surr: 2,4,6-Tribromophenol	85	10	75		113.0	50	150				
Surr: 2-Fluorobiphenyl	69	10	75		92.0	50	150				
Surr: 2-Fluorophenol	79	10	75		106.0	50	150				
Surr: Nitrobenzene-d5	82	10	75		109.0	50	150				
Surr: Phenol-d5	89	10	75		118.0	50	150				



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Method: SW8270C **Analysis Date:** 12/02/2021 17:52 **Prep Date:**
Lab ID: 02-Dec-21_CCV_5 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Surr: Terphenyl-d14	75	10	75		100.0	50	150				

Associated Samples: **B21112214-002A**

Analytical QC Exceptions Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21112214
Project: CV18F0126/60571032.02.21.01

Report Date: 03/10/2022

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				
SW8015C	Diesel Range Organics	161704	002B	DUP	B21112214-002BMS	12/1/2021	13:04	Diesel Range Organics (C10 to C24)				31	20.0	R				
								Total Extractable Hydrocarbons				32	20.0	R				
						12/2/2021	23:09	Diesel Range Organics (SGT-C10 to C24)				24	20.0	R				
								Total Extractable Hydrocarbons (SGT)				24	20.0	R				
			MS-DOD	B21112214-002BMS-RRO	12/1/2021	13:46	TEH(Oil Range)	121.0	41	113			S					
SW8270C	Semi-Volatile Organic Compounds	R371189	002A	CCV	02-Dec-21_CCV_2	12/2/2021	16:15	n-Nitrosodimethylamine	132.0	80	120			S				
	Semi-Volatile Organic Compounds, Extended List	161693	002A	MBLK	MB-161693	11/30/2021	19:12	Surr: 2-Fluorobiphenyl	35.0	44	119			S				
								LCS-DOD	LCS-161693	11/30/2021	19:45	4-Nitrophenol	38.0	15	36		S	
								LCSD-DOD	LCSD-161693	11/30/2021	20:17	4-Nitrophenol	39.0	15	36	4.3	20.0	S
												n-Nitrosodimethylamine	60.0	20	45	12	20.0	S
MS-DOD	B21112101-001AMS	11/30/2021	21:22	4-Nitrophenol	39.0	15	36			S								



Preparation and Analysis Dates Report

Work Order: B21112214

Client: AECOM - Honolulu

Project Name: CV18F0126/60571032.02.21.01

Report Date: 3/10/2022

Lab ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Method	Prep Date	Prep Batch	Analysis Method	Analysis Date
002A	ERH1968 (Adit 3 Sump)	11/24/2021 18:15	Ground Water	Semi-Volatile Organic Compounds		SW3510C	11/29/2021 13:34	161693	SW8270C	12/02/2021 17:20
002B	ERH1968 (Adit 3 Sump)	11/24/2021 18:15	Ground Water	Diesel Range Organics		SW3520C	11/29/2021 14:36	161704	SW8015C	12/01/2021 04:30
						SW3520C	11/29/2021 14:36	161704	SW8015C	12/01/2021 11:38
						SW3520C	11/29/2021 14:36	161704	SW8015C	12/02/2021 18:52

Chemical Abstracts Service (CAS) Registry Numbers

Prepared by Billings, MT Branch

Client: AECOM - Honolulu**Workorder:** B21112214**Project:** CV18F0126/60571032.02.21.01**Report Date:** 03/10/2022

Analyses	CAS No
VOLATILE ORGANIC COMPOUNDS	
Benzene	71-43-2
Bromobenzene	108-86-1
Bromochloromethane	74-97-5
Bromodichloromethane	75-27-4
Bromoform	75-25-2
Bromomethane	74-83-9
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

PETROLEUM HYDROCARBONS-VOLATILE

C6 to C10
Total Purgeable Hydrocarbons

PETROLEUM HYDROCARBONS-SEMI-VOLATILE

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

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
1-Methylnaphthalene	90-12-0
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-Methylnaphthalene	91-57-6
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
Acenaphthene	83-32-9
Acenaphthylene	208-96-8
Anthracene	120-12-7
Azobenzene	103-33-3

Benzidine	92-87-5
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
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
Chrysene	218-01-9
Di-n-butyl phthalate	84-74-2
Di-n-octyl phthalate	117-84-0
Dibenzo(a,h)anthracene	53-70-3
Diethyl phthalate	84-66-2
Dimethyl phthalate	131-11-3
Fluoranthene	206-44-0
Fluorene	86-73-7
Hexachlorobenzene	118-74-1
Hexachlorobutadiene	87-68-3
Hexachlorocyclopentadiene	77-47-4
Hexachloroethane	67-72-1
Indeno(1,2,3-cd)pyrene	193-39-5
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
Naphthalene	91-20-3
Nitrobenzene	98-95-3
o-Cresol	95-48-7
Pentachlorophenol	87-86-5
Phenanthrene	85-01-8
Phenol	108-95-2
Pyrene	129-00-0
Pyridine	110-86-1

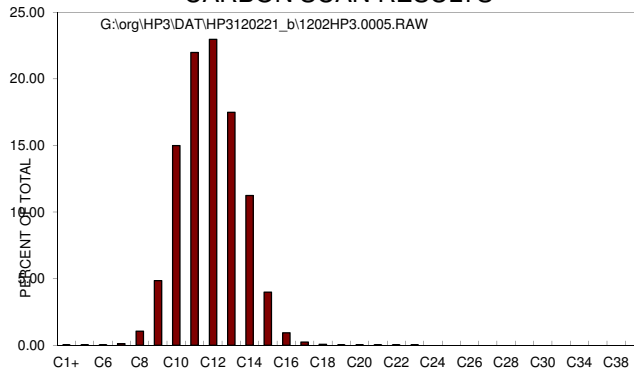
HYDROCARBON ID, SIMULATED DISTILLATION

C1-C5
C5-C6
C6-C7
C7-C8
C8-C9
C9-C10
C10-C11
C11-C12
C12-C13
C13-C14
C14-C15

C15-C16
C16-C17
C17-C18
C18-C19
C19-C20
C20-C21
C21-C22
C22-C23
C23-C24
C24-C25
C25-C26
C26-C27
C27-C28
C28-C29
C29-C30
C30-C32
C32-C34
C34-C36
C36-C38
C38-C40
C40+

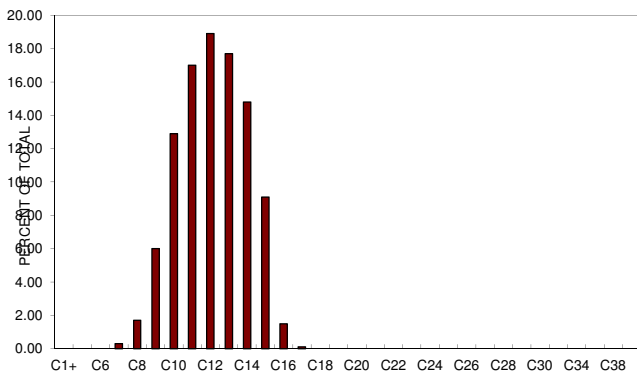
CARBON SCAN ANALYSIS RESULTS AND REFERENCE CARBON SCANS FOR COMPARISON PURPOSES

**B21112214-001A ()
CARBON SCAN RESULTS**



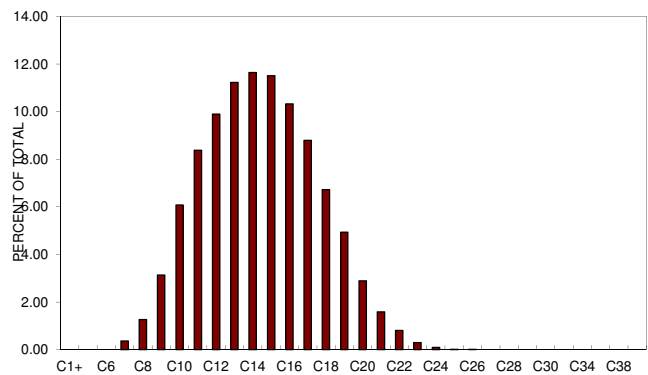
CARBON NUMBER (alkanes)

Diesel Fuel, #1



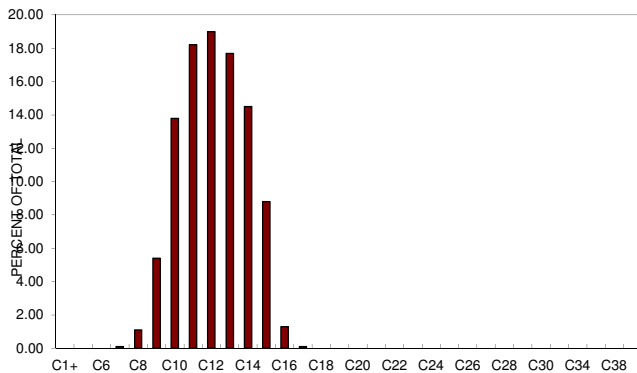
CARBON NUMBER (alkanes)

Diesel Fuel, #2



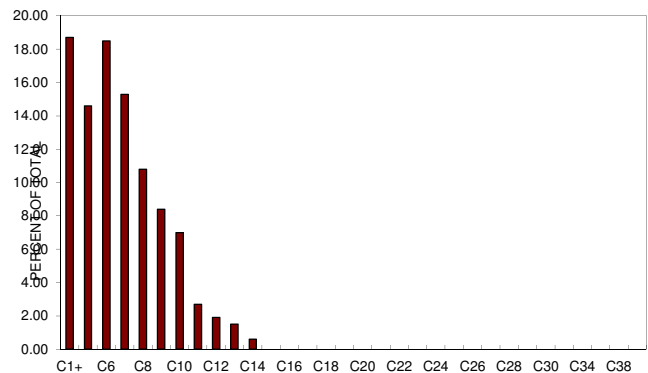
CARBON NUMBER (alkanes)

Kerosene



CARBON NUMBER (alkanes)

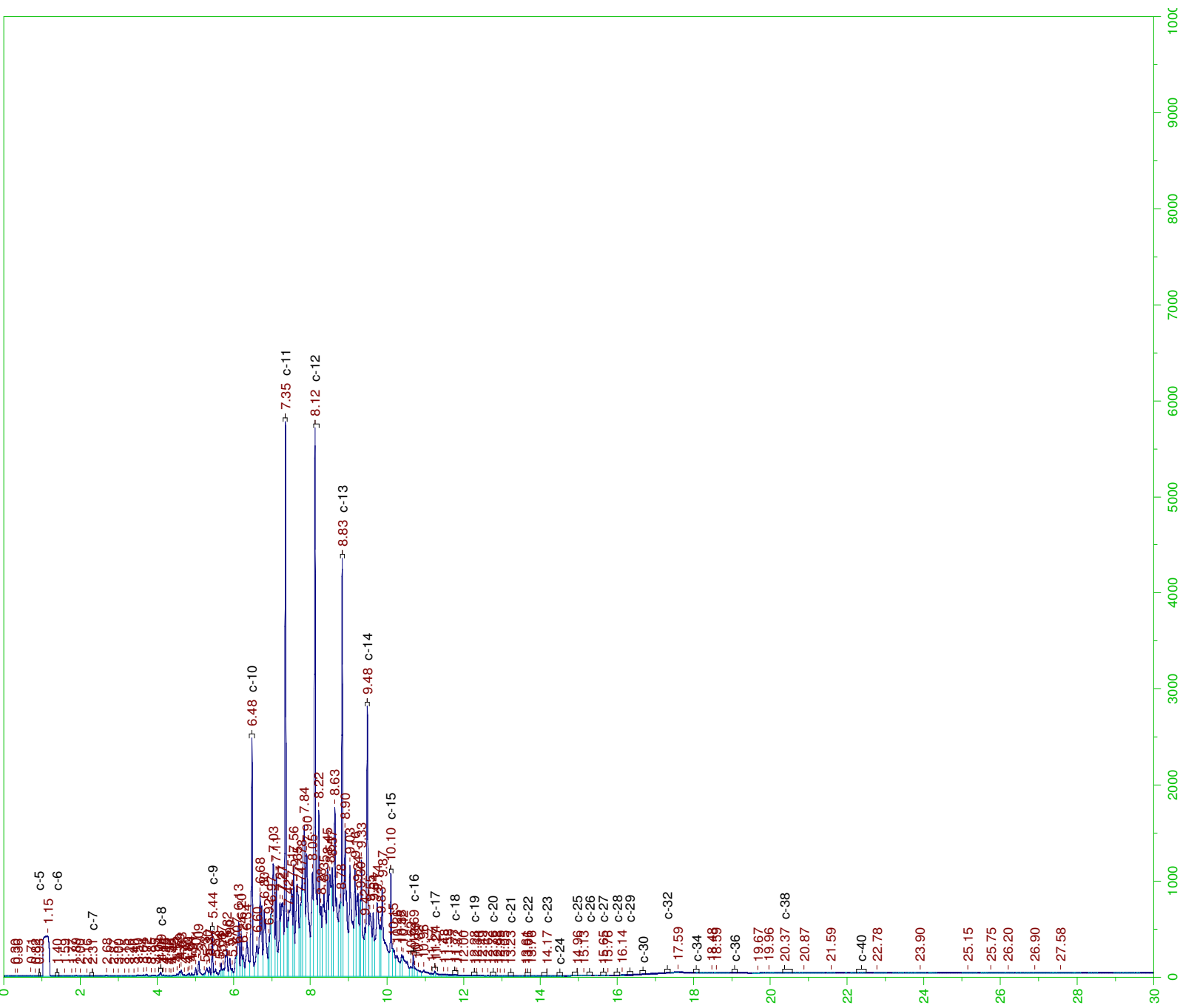
Gasoline, Regular



CARBON NUMBER (alkanes)

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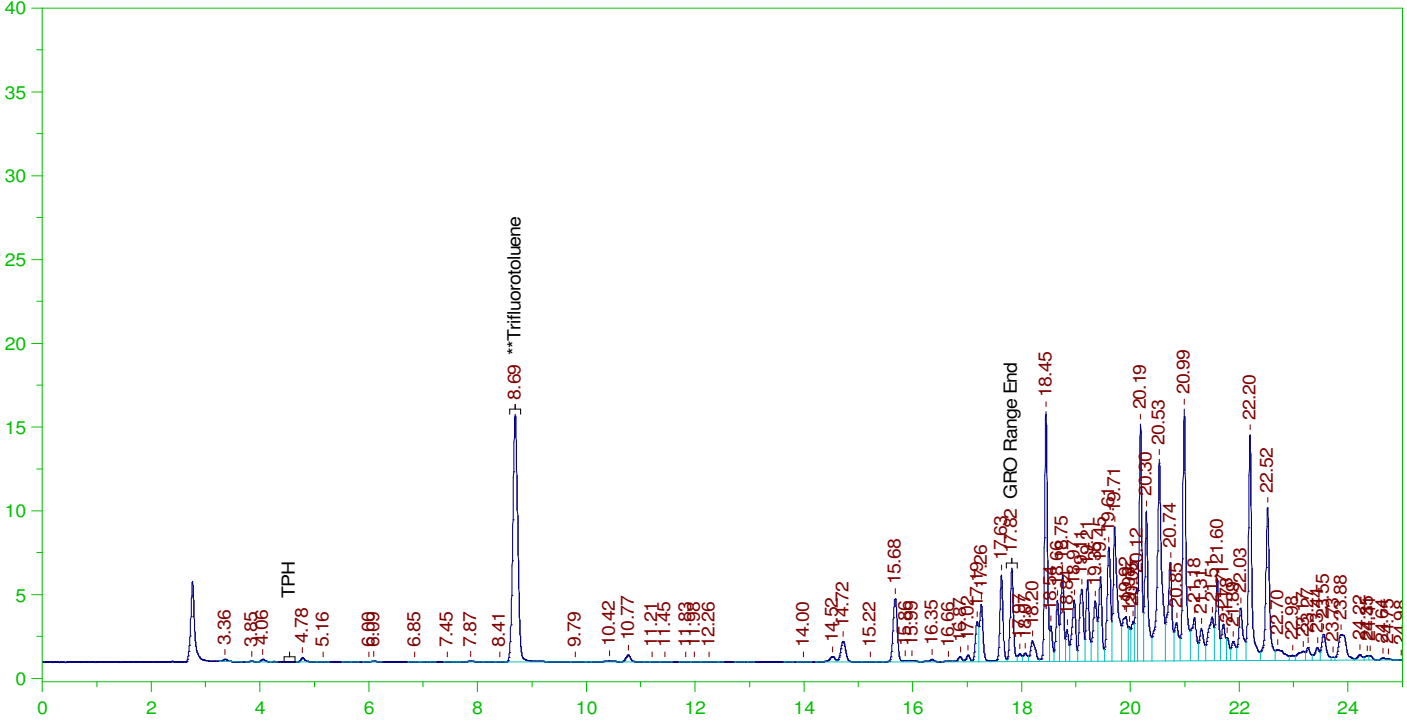
B21112214-001A ; 1202HP3 , \$HC-CSCAN-O



ERH1968 (Adit 3 Sump)

G:\Org\PE1\DAT\PE1120221_b\1202PE1B.0006.RAW

B21112214-002D ;1202PE1 , \$HC-8015-GRO-W,,(1,10)



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B21112214-002D ;1202PE1 , \$HC-8015-GRO-W,, (1,10)
 Raw File: G:\Org\PE1\DAT\PE1120221_b\1202PE1B.0006.RAW
 Date & Time Acquired: 12/2/2021 2:44:36 PM
 Method File: G:\Org\PE1\Methods\211122GROB%.MET
 Calibration File: G:\Org\PE1\Cals\210914GRO8015CB.CAL
 Sample Weight: 5 Dilution: 10 S.A.: 10

Mean RF for GRO: 904.4937
 Mean RF for TPH: 881.4131
 Rt range for Gasoline Range Organics: 4.44 to 17.92

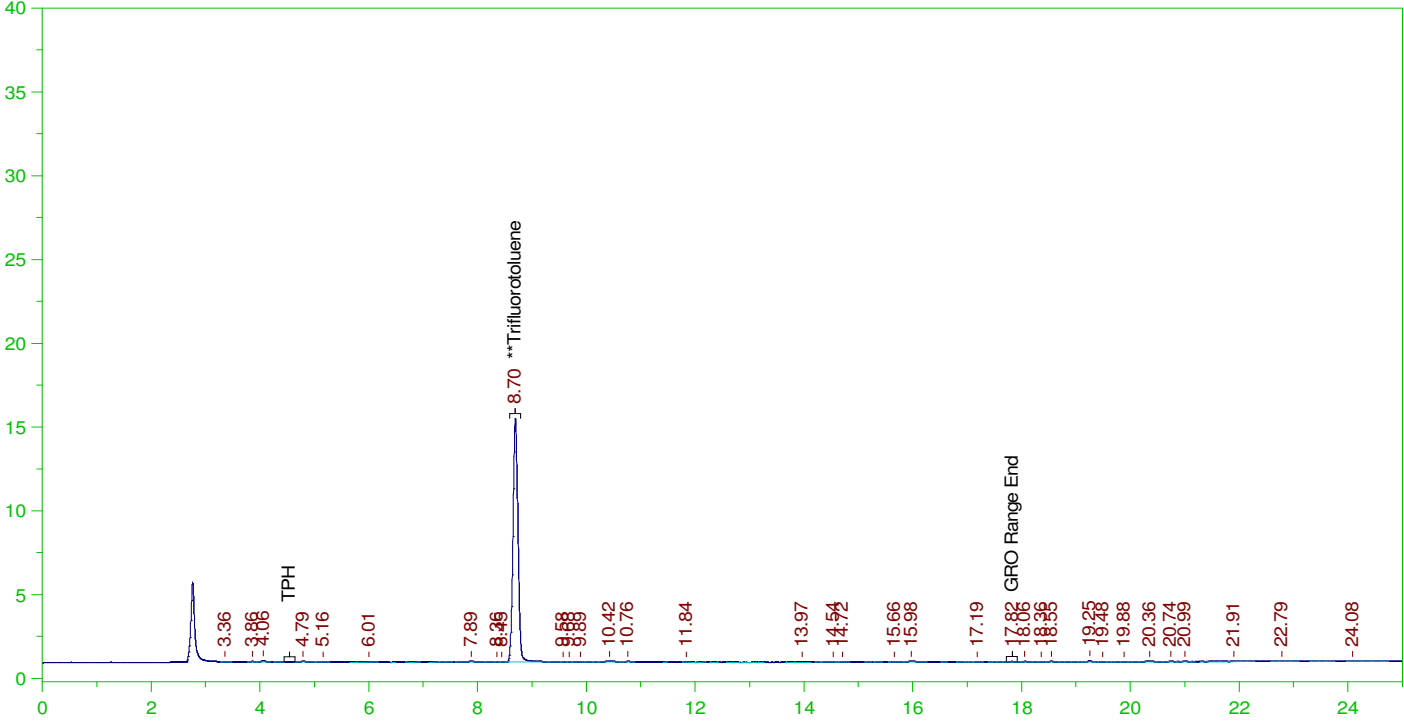
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**Trifluorotoluene	8.693	250.	202.75	81.1

GRO Area:114593.7 GRO Amount: 253.3876
 TPH Area:1000075 TPH Amount: 2269.253

ERH1969 (Trip Blank)-Client Provided

G:\Org\PE1\DAT\PE1120221_b\1202PE1B.0005.RAW

B21112214-003B ;1202PE1 , \$HC-8015-GRO-W,



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B21112214-003B ;1202PE1 , \$HC-8015-GRO-W,
Raw File: G:\Org\PE1\DAT\PE1120221_b\1202PE1B.0005.RAW
Date & Time Acquired: 12/2/2021 2:09:32 PM
Method File: G:\Org\PE1\Methods\211122GROB%.MET
Calibration File: G:\Org\PE1\Cals\210914GRO8015CB.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for GRO: 904.4937
Mean RF for TPH: 881.4131
Rt range for Gasoline Range Organics: 4.44 to 17.92

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**Trifluorotoluene	8.697	25.	20.014	80.06

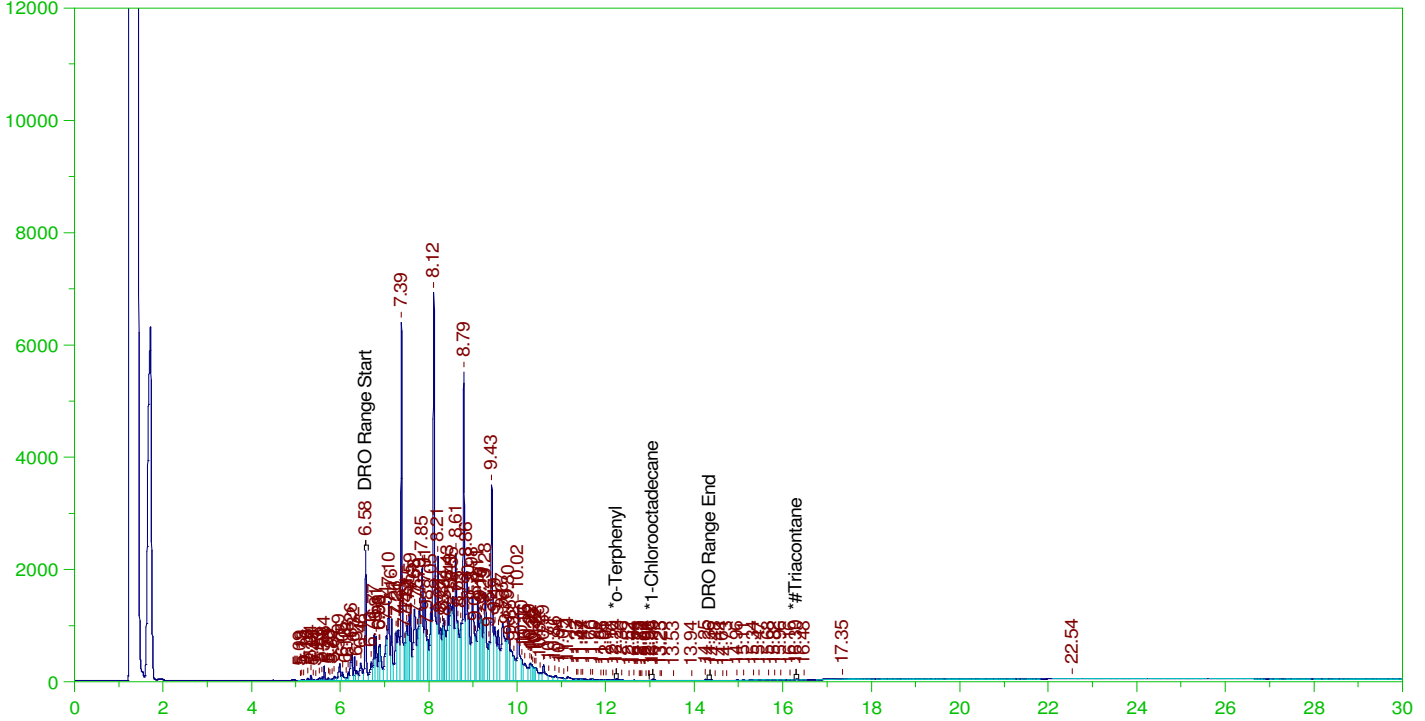
GRO Area:4926.446 GRO Amount: 1.089327
TPH Area:7959.207 TPH Amount: 1.80601

ERH1968 (Adit 3 Sump)

Batch ID: 161704

G:\Org\HP5\DAT\HP5112921_b\1129HP5.0061.RAW

B21112214-002B ; 1129HP5 , \$HC-8015-DRO-W, ,(2,50)



DIESEL RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B21112214-002B ; 1129HP5 , \$HC-8015-DRO-W, ,(2,50)
 Raw File: G:\Org\HP5\DAT\HP5112921_b\1129HP5.0061.RAW
 Date & Time Acquired: 12/1/2021 4:30:59 AM
 Method File: G:\Org\HP5\Methods\DR_8015-112961-ID-L%.met
 Calibration File: G:\Org\HP5\Cals\SW8015C_DRO211102ID-24-Tri.CAL
 Sample Weight: 1050 Dilution: 100 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.54 to 14.39

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.239	.19	.289	151.8	-
*1-Chlorooctadecane	13.059	.19	.153	80.1	-
*#Triacontane	16.303	.19	.134	70.43	-

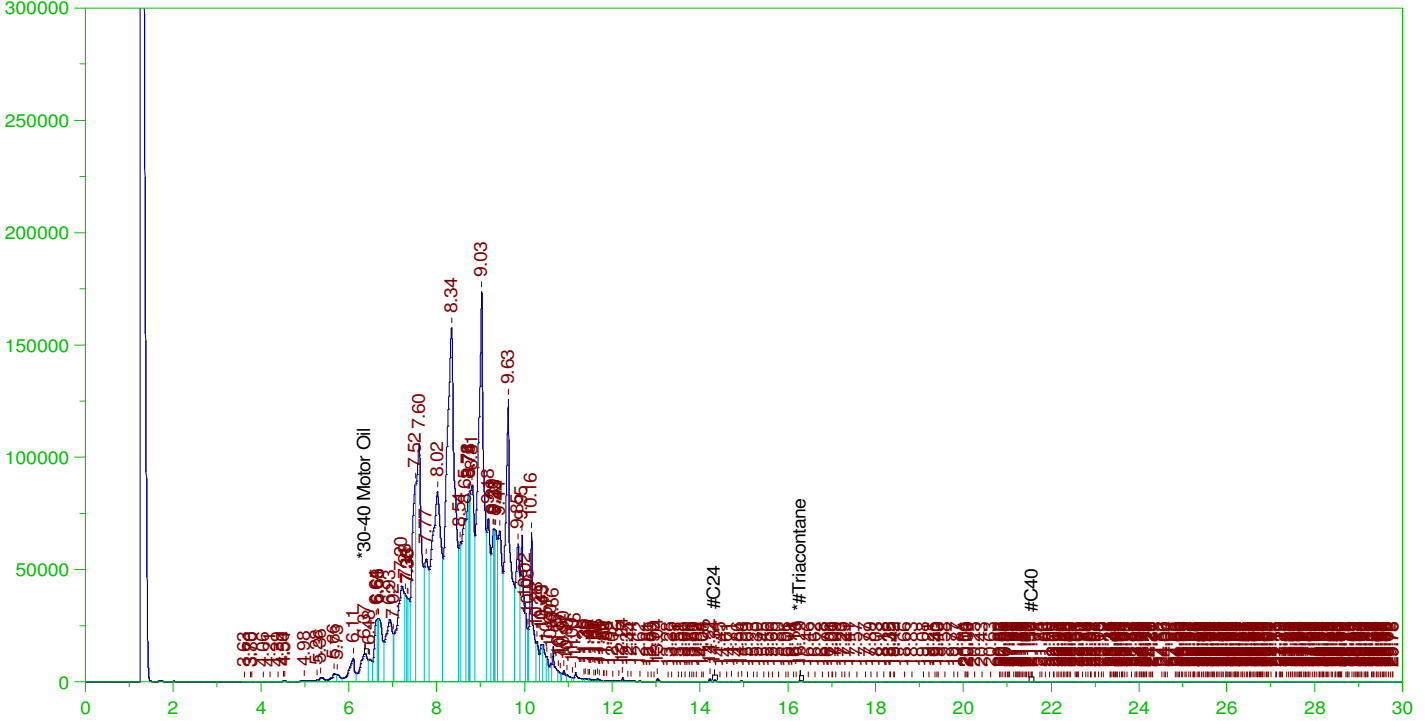
DRO Area: 2.250457E+08 DRO Amount: 683.5963
 TEH Area: 2.327134E+08 TEH Amount: 706.8876

ERH1968 (Adit 3 Sump)

Batch ID: 161704

G:\org\HP5\DAT\HP5112921_b\1129HP5.0071.RAW

B21112214-002B ; 1129HP5 , \$HC-8015-DRO-W, RR for oil



RESIDUAL RANGE ORGANICS CHROMATOGRAM

Sample Name: B21112214-002B ; 1129HP5 , \$HC-8015-DRO-W, RR for oil
 Raw File: G:\org\HP5\DAT\HP5112921_b\1129HP5.0071.RAW
 Date & Time Acquired: 12/1/2021 11:38:35 AM
 Method File: G:\Org\HP5\Methods\D3_OROS-71-AFa-L%.MET
 Calibration File: G:\Org\HP5\Cals\SW8015C_ORO211017AFa-SAMP.CAL
 Sample Weight: 1050 Dilution: 2 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41
 Rt range for Residual Range Organics: 14.29 to 21.606

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.288	.476	.126	26.5

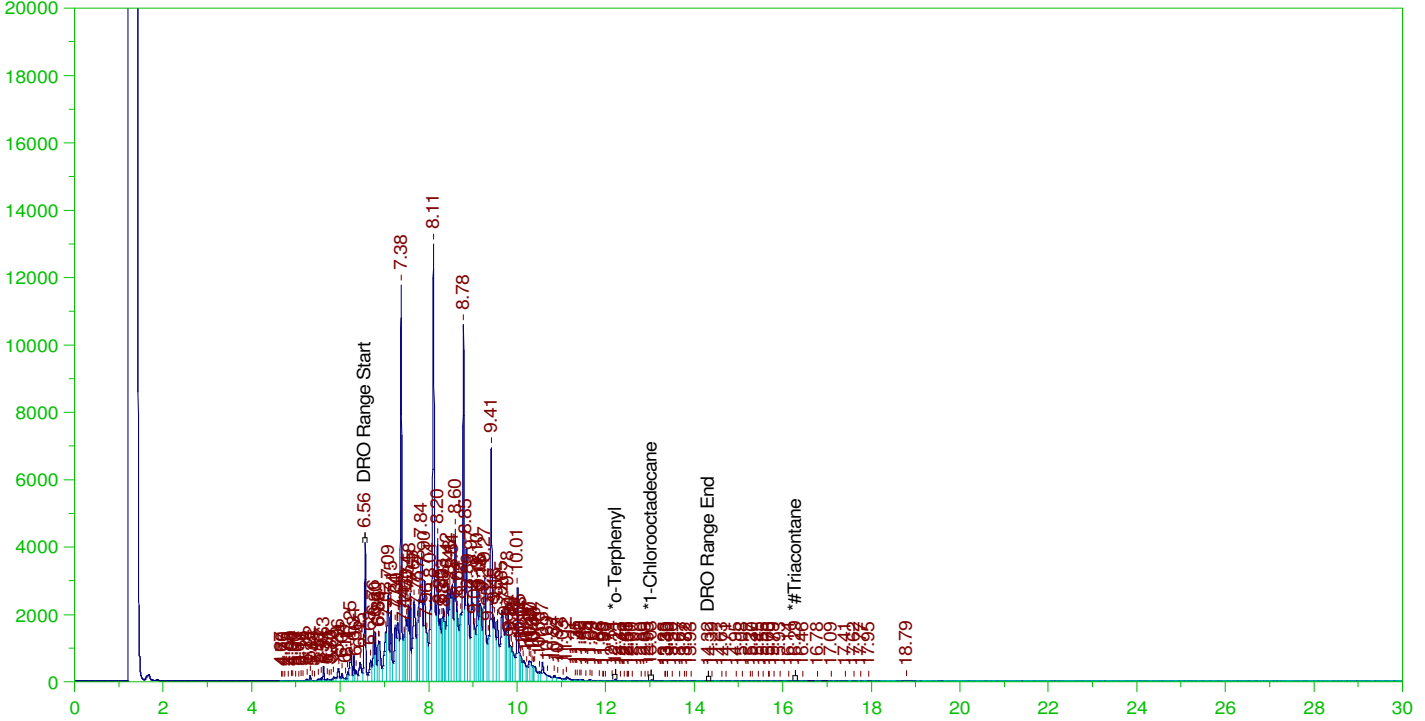
RRO Area: 1.465655E+07 RRO AMOUNT: 0.9780966

ERH1968 (Adit 3 Sump)

Batch ID: 161704

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B21112214-002B ;1202HP5 , \$HC-8015-DRO-W, ,(2,25)



DIESEL RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B21112214-002B ;1202HP5 , \$HC-8015-DRO-W, SGT, (2,25)
 Raw File: G:\org\HP5\DAT\HP5120221_b\1202HP5.0017.RAW
 Date & Time Acquired: 12/2/2021 6:52:03 PM
 Method File: G:\Org\HP5\Methods\DR_8015-120217-IE-L%.met
 Calibration File: G:\Org\HP5\Cals\SW8015C_DRO211102IE-24-Tri.CAL
 Sample Weight: 1050 Dilution: 50 S.A.: 1

Mean RF for TEH: 31353.19

Rt range for Diesel Range Organics: 6.51 to 14.37

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.215	.19	.24	125.94	-
*1-Chlorooctadecane	13.035	.19	.17	89.02	-
*#Triacontane	16.286	.19	.081	42.74	-

DRO Area: 4.395819E+08 DRO Amount: 667.6345

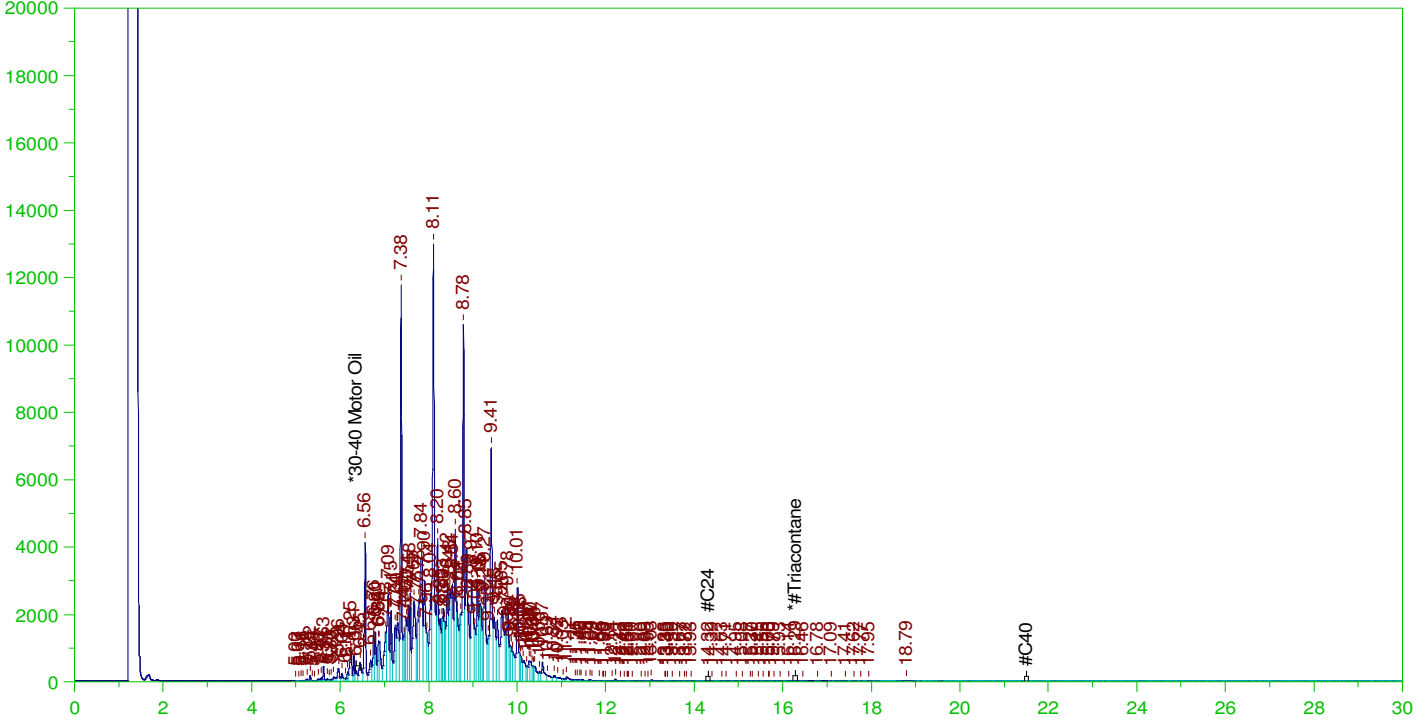
TEH Area: 4.529266E+08 TEH Amount: 687.9023

ERH1968 (Adit 3 Sump)

Batch ID: 161704

G:\org\HP5\DAT\HP5120221_b\1202HP5.0017.RAW

B21112214-002B ;1202HP5 , \$HC-8015-DRO-W, ,(2,25)



RESIDUAL RANGE ORGANICS CHROMATOGRAM

Sample Name: B21112214-002B ;1202HP5 , \$HC-8015-DRO-W,SGT , (2,25)
 Raw File: G:\org\HP5\DAT\HP5120221_b\1202HP5.0017.RAW
 Date & Time Acquired: 12/2/2021 6:52:03 PM
 Method File: G:\Org\HP5\Methods\DR_OROS-1200217-AG-L%.MET
 Calibration File: G:\Org\HP5\Cals\SW8015C_ORO211017AG-SAMP.CAL
 Sample Weight: 1050 Dilution: 50 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 28542.41
 Rt range for Residual Range Organics: 14.26 to 21.56

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane	16.286	.476	.081	17.1

RRO Area:120224.8 RRO AMOUNT: 0.2005783

From: Ramos, Alethea <alethea.ramos@aecom.com>
Sent: Monday, December 13, 2021 11:39 AM
To: Darcy Chirrick; 'Ileana Rhodes'
Cc: 'Shari Endy'; billingsPM@energylab.com; 'Tabitha Edwards'; Pascua, Margie
Subject: RE: [EXTERNAL] RE: RE: B21112214_Preliminary

Hi Darcy,

Thank you, please proceed. Product sample is not for typical EPA methods. ASTM methods are appropriate for characterization.

Alethea Ramos, CIH
Environmental Scientist, Environmental Health & Science, Environment
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M +1-808-389-5383
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From: Darcy Chirrick <dchirrick@energylab.com>
Sent: Monday, December 13, 2021 6:01 AM
To: Ramos, Alethea <alethea.ramos@aecom.com>; 'Ileana Rhodes' <ilrhodes@gsi-net.com>
Cc: 'Shari Endy' <sendy@energylab.com>; billingsPM@energylab.com; 'Tabitha Edwards' <tedwards@energylab.com>; Pascua, Margie <Margie.Pascua@aecom.com>
Subject: [EXTERNAL] RE: RE: B21112214_Preliminary
Importance: High

As discussed last week, there is no method number for the SIMDIST analysis. It is also not certified on our ANAB certificate so we will need written documentation that you want to proceed.

Sincerely,

Energy Laboratories, Inc.

Trust our People. Trust our Data.

Darcy Chirrick | Project Management | Billings, MT

O: 406-869-7278 | dchirrick@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.

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From: Ramos, Alethea [<mailto:alethea.ramos@aecom.com>]

Sent: Friday, December 10, 2021 9:29 PM

To: Darcy Chirrick; 'Ileana Rhodes'

Cc: 'Shari Endy'; billingsPM@energylab.com; 'Tabitha Edwards'; Pascua, Margie

Subject: RE: [EXTERNAL] RE: B21112214_Preliminary

Hi Darcy,

Can you provide the exact method name and number for ERH1967 (Product Sample) that was used for results indicated in the preliminary report?

Thanks again,

Alethea Ramos, CIH

Environmental Scientist, Environmental Health & Science, Environment

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From: Darcy Chirrick <dchirrick@energylab.com>
Sent: Friday, December 10, 2021 2:30 AM
To: 'Ileana Rhodes' <ilrhodes@gsi-net.com>
Cc: Ramos, Alethea <alethea.ramos@aecom.com>; 'Shari Endy' <sendy@energylab.com>; billingsPM@energylab.com;
'Tabitha Edwards' <tedwards@energylab.com>; Pascua, Margie <Margie.Pascua@aecom.com>
Subject: [EXTERNAL] RE: B21112214_Preliminary

Thank you Ileana. We will need permission to proceed with the SIMDIS since this is a DOD project.

Energy Laboratories, Inc.

Trust our People. Trust our Data.

Darcy Chirrick | Project Management | Billings, MT
O: 406-869-7278 | dchirrick@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.

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From: Ileana Rhodes [<mailto:ilrhodes@gsi-net.com>]
Sent: Thursday, December 9, 2021 5:40 PM
To: Darcy Chirrick
Cc: Ramos, Alethea; Shari Endy; billingsPM@energylab.com; Tabitha Edwards; Pascua, Margie
Subject: Re: [EXTERNAL] B21112214_Preliminary

In my opinion, that should be ok as this is not an environmental type analysis but I am not an expert on DOD accreditation.

Sent from my iPhone

On Dec 9, 2021, at 6:25 PM, Darcy Chirrick <dchirrick@energylab.com> wrote:

Hi Alethea,
I wanted to make certain that you understand that our laboratory is not accredited for the SIMDIS analysis for the product sample submitted.

Would you like us to proceed?

Energy Laboratories, Inc.

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Darcy Chirrick | Project Management | Billings, MT

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.

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From: Ramos, Alethea [<mailto:alethea.ramos@aecom.com>]
Sent: Wednesday, December 8, 2021 5:42 PM
To: Shari Endy; billingsPM@energylab.com
Cc: Tabitha Edwards; Pascua, Margie; Ileana Rhodes
Subject: RE: [EXTERNAL] B21112214_Preliminary

Hi Shari,

Can you provide the SIMDIS method number for ERH1967 (Product Sample)?

Thank you,

Alethea Ramos, CIH
Environmental Scientist, Environmental Health & Science, Environment
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From: Tabitha Edwards <tedwards@energylab.com>
Sent: Friday, December 3, 2021 2:23 PM
To: Ramos, Alethea <alethea.ramos@aecom.com>; icanlas@lab-data.com; Pascua, Margie

<Margie.Pascua@aecom.com>; scuenco@lab-data.com; trommelfanger@lab-data.com

Subject: [EXTERNAL] B21112214_Preliminary

Attached you will find the preliminary report for samples received by Energy Laboratories.

***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.*

Please do not reply to this email. If you need further assistance, please contact one of our project managers by email at billings_pm@energylab.com or by calling 406.252.6325.

Energy Laboratories, Inc. appreciates your business.

Sincerely,

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

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