ANALYTICAL SUMMARY REPORT

March 18, 2022

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

Work Order: B21120396 Quote ID: 5912

Project Name: CV18F0126/60571032.02.20.01

Energy Laboratories Inc Billings MT received the following 2 samples from AECOM - Honolulu on 12/6/2021 for analysis.

Lab ID	Client Sample ID	Collect Date	Received Date	Matrix	Test
B21120396-001	ERH2016 (RHMW15-05)	12/02/21 15:36	12/06/2021	Ground Water	DRO-Liquid-Liquid Extraction SW3520C DRO-Liquid-Liquid Extraction SW3520C Separatory Funnel SW3510C Liquid-Liquid Ext. 8260-Volatile Organic Compounds-BTEX SW8260B Gasoline Range Organics SW8015C Diesel Range Organics SW8015C Diesel Range Organics SW8015C Low Level PAH SW8270C
B21120396-002	ERH2015 Trip Blank Client	12/02/21 15:36	12/06/2021	Trip Blank	8260-Volatile Organic Compounds-BTEX 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: Cindy Rohrer Laboratory Manager

Digitally signed by Cindy Rohrer
DN: dc=com, dc=bl2000, ou=BL, ou=Users, cn=Cindy Rohrer, email=crohrer@energylab.com
Date: 2022.03.18 18:15:57 -06'00'

CLIENT: AECOM - Honolulu
Project: CV18F0126/60571032.02.20.01
Work Order: B21120396

Revised Date: 3/18/2022
Report Date: 1/10/2022

CASE NARRATIVE

Revised Report 3/18/2022:

A request was received from Cathy Larson at AECOM to re-analyze DRO on samples ERH2016 (RHMW15-05) (B21120396-001), ERH2013 (RHMW08) (B21120381-005) and ERH2014 (RHMW08) (B21120381-006).

Before re-analysis bottle identifications were verified.

The following results were originally reported from an analytical run on 12/8/2021 for sample ERH2016 (RHMW15-05) (B21120396-001):

Diesel Range Organics (C10 to C24) 0.92 mg/L
Oil Range Hydrocarbons (C24-C40 1.1 mg/L
Total Extractable Hydrocarbons 2.2 mg/L

The sample was re-extracted and re-analyzed on 3/15/2022 with the following results:

Diesel Range Organics (C10 to C24) ND mg/L
Oil Range Hydrocarbons (C24-C40 ND mg/L
Total Extractable Hydrocarbons ND mg/L

The result of the re-analysis did not match the original result. The chromatograms were reviewed. The hydrocarbon pattern for samples ERH2016 (RHMW15-05) (B21120396-001 bottle 1 of 2) and ERH2013 (RHMW08) (B21120381-005 bottle 1 of 2) analyzed on 12/8/2021 had very similar patterns suggesting they were from the same sample source.

The hydrocarbon patterns for samples ERH2016 (RHMW15-05) (B21120396-001 bottle 2 of 2) analyzed on 3/15/2022 and ERH2013 (RHMW08) (B21120381-005 bottle 2 of 2) analyzed on 2/24/2022 also had very similar patterns suggesting they were from the same sample source.

The chromatograms suggest one of the two bottles for sample ERH2016 (RHMW15-05) (B21120396-001) submitted for DRO analysis was actually sample ERH2013 (RHMW08) (B21120381-005) and one of the two bottles submitted for sample ERH2013 (RHMW08) (B21120381-005) was actually ERH2016 (RHMW15-05) (B21120396-001).

Both sets of data are reported.

The report has been revised and replaces the previously issued report dated 1/10/2022 in its entirety.

General Comments:

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

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

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

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. All quality control measures met criteria; therefore there were no analytical QC exceptions on this report.

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record 202112

DoD Samples

www.energylab.com

COC# ___-05-NOI Page 1 of 1

Account Information (Billing Information)

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

Report Information (if different than Account Information)

Company/Name	AECOM
Contact	see Account Information
Phone	
Mailing Address	
City, State, Zip	
Email	USAPImaging@aecom.com
Receive Report	☐Hard Copy ☐Email
Special Report/Formats:	☒ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

1. Project performed under DoD QSM.
2. TPH-DRO/RRO needs 3520 extraction.
3. Preliminary data (or Level 1) in 1-2-business days; Level IV report in 10 working days.
4. Note: NOI log is separate from other COCs.

Project Information

Project Name, PWSID, Permit, etc.	CV18F0126/60571032.02.20.01
Sampler Name GM, MY, ADL	Sampler Phone 808-987-3201
Sample Origin State Hawaii	EPA/State Compliance ☐ Yes ☒ No

URANIUM MINING CLIENTS MUST indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

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

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 Date	Collection Time	Number of Containers	Matrix (See Codes Above)	EPA 8015 TPH-DRO/RRO w/ SGC	EPA 8015 TPH-DRO/RRO	8260 BTEX, 8015 TPH-GRO	PAHs (Naph, 1-2 MN) by8270D					See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	ERH2015 (Trip Blank)	12/02/2021	9:20 am	3	WQ			✔		Clean trip blank					X	B21120396
2	ERH2016 (RHMW15-05)	12/02/2021	11:36 am	10 12	GW	✔	✔	✔	✔			QC 12/6/21			X	
3																
4																
5																
6																
7																
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)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Alex Edmonds	12/02/21 15:00				
	Relinquished by (print)	Date/Time	Signature	Received by laboratory (print)	Date/Time	Signature
				Brian Chinn	12/6/21 14:30	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °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.

ELI COC 01/21 v.4

Work Order Receipt Checklist

AECOM - Honolulu

B21120396

Login completed by: Leslie S. Cadreau
Date Received: 12/6/2021

Reviewed by: BL2000\gmccartney
Received by: dac

Reviewed Date: 12/7/2021
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☑	No ☐	Not Present ☐
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	2.2°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	Not Applicable ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

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

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

Contact and Corrective Action Comments:

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

The Trip Blanks were prepared by the client. Preservative traceability is not available for these containers.

Qualifiers and Abbreviations

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

Qualifiers and Abbreviations

Abbreviation

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

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

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B21120396-001
Client: AECOM - Honolulu
Collection Date: 12/02/2021 15:36
Client Sample ID: ERH2016 (RHMW15-05)
Date Received: 12/06/2021
Project: CV18F0126/60571032.02.20.01
Report Date: 01/10/2022
Matrix: Ground Water
Revised Date: 03/18/2022

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
VOLATILE ORGANIC COMPOUNDS												
Benzene	ND	ug/L	1	U	1.0	0.20	0.05		SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
Ethylbenzene	ND	ug/L	1	U	1.0	0.20	0.05		SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
Toluene	ND	ug/L	1	U	1.0	0.20	0.06		SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
m+p-Xylenes	ND	ug/L	1	U	1.0	0.20	0.07		SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
o-Xylene	ND	ug/L	1	U	1.0	0.20	0.04		SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
Xylenes, Total	ND	ug/L	1	U	1.0	0.20	0.04		SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
Surr: 1,2-Dichloroethane-d4	93.0	%REC	1		81-118				SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
Surr: Dibromofluoromethane	99.0	%REC	1		80-119				SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
Surr: p-Bromofluorobenzene	100.0	%REC	1		85-114				SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
Surr: Toluene-d8	94.0	%REC	1		89-112				SW8260B	12/6/2021 18:05/sbd	SV5972.I_211206A : 14	R371353
PETROLEUM HYDROCARBONS-VOLATILE												
C6 to C10	ND	ug/L	1	U	20	8.7	2.3		SW8015C	12/11/2021 00:04/jp	PE 1_211210A : 19	R371606
Total Purgeable Hydrocarbons	10	ug/L	1	J	20	10	3.6		SW8015C	12/11/2021 00:04/jp	PE 1_211210A : 19	R371606
Surr: Trifluorotoluene	78.0	%REC	1		70-130				SW8015C	12/11/2021 00:04/jp	PE 1_211210A : 19	R371606
- Note 1: C6 to C10 is defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.												
- Note 2: Total Purgeable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.												
PETROLEUM HYDROCARBONS-SEMI-VOLATILE												
Diesel Range Organics (C10 to C24)	ND	mg/L	1	U	0.30	0.14	0.037		SW8015C	03/15/2022 00:25/amn	GCFID-HP5-B_220314A : 15	164471
Diesel Range Organics (C10 to C24)	0.92	mg/L	1		0.31	0.16	0.040		SW8015C	12/8/2021 15:51/amn	GCFID-HP5-B_211207B : 18	161934
Diesel Range Organics (SGT-C10 to C24)	ND	mg/L	1	U	0.31	0.12	0.040		SW8015C	12/10/2021 05:20/amn	GCFID-HP5-B_211209A : 18	161934
Oil Range Hydrocarbons (C24 to C40)	ND	mg/L	1	U	0.30	0.14	0.085		SW8015C	03/15/2022 00:25/amn	GCFID-HP5-B_220314A : 15	164471
Oil Range Hydrocarbons (C24 to C40)	1.1	mg/L	1		0.31	0.16	0.091		SW8015C	12/8/2021 15:51/amn	GCFID-HP5-B_211207B : 18	161934
Oil Range Hydrocarbons (SGT-C24 to C40)	ND	mg/L	1	U	0.31	0.16	0.091		SW8015C	12/10/2021 05:20/amn	GCFID-HP5-B_211209A : 18	161934
Total Extractable Hydrocarbons	ND	mg/L	1	U	0.30	0.14	0.072		SW8015C	03/15/2022 00:25/amn	GCFID-HP5-B_220314A : 15	164471
Total Extractable Hydrocarbons	2.2	mg/L	1		0.31	0.16	0.078		SW8015C	12/8/2021 15:51/amn	GCFID-HP5-B_211207B : 18	161934
Total Extractable Hydrocarbons (SGT)	0.042	mg/L	1	J	0.31	0.12	0.034		SW8015C	12/10/2021 05:20/amn	GCFID-HP5-B_211209A : 18	161934
Surr: o-Terphenyl	87.0	%REC	1		56-125				SW8015C	03/15/2022 00:25/amn	GCFID-HP5-B_220314A : 15	164471
Surr: o-Terphenyl	100.0	%REC	1		56-125				SW8015C	12/8/2021 15:51/amn	GCFID-HP5-B_211207B : 18	161934
Surr: o-Terphenyl (SGT)	93.0	%REC	1		56-125				SW8015C	12/10/2021 05:20/amn	GCFID-HP5-B_211209A : 18	161934
Surr: n-Triacontane	83.0	%REC	1		50-150				SW8015C	03/15/2022 00:25/amn	GCFID-HP5-B_220314A : 15	164471
Surr: n-Triacontane	96.0	%REC	1		50-150				SW8015C	12/8/2021 15:51/amn	GCFID-HP5-B_211207B : 18	161934
Surr: n-Triacontane (SGT)	84.0	%REC	1		50-150				SW8015C	12/10/2021 05:20/amn	GCFID-HP5-B_211209A : 18	161934
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.												
SEMI-VOLATILE ORGANIC COMPOUNDS (LOW LEVEL) BY SIM												
1-Methylnaphthalene	ND	ug/L	1	U	0.11	0.11	0.023		SW8270C	12/8/2021 18:54/jph	SV5975.I_211208A : 20	161925
2-Methylnaphthalene	ND	ug/L	1	U	0.11	0.11	0.020		SW8270C	12/8/2021 18:54/jph	SV5975.I_211208A : 20	161925
Naphthalene	ND	ug/L	1	U	0.11	0.11	0.032		SW8270C	12/8/2021 18:54/jph	SV5975.I_211208A : 20	161925

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B21120396-001
Client: AECOM - Honolulu
Collection Date: 12/02/2021 15:36
Client Sample ID: ERH2016 (RHMW15-05)
Date Received: 12/06/2021
Project: CV18F0126/60571032.02.20.01
Report Date: 01/10/2022
Matrix: Ground Water
Revised Date: 03/18/2022

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
SEMI-VOLATILE ORGANIC COMPOUNDS (LOW LEVEL) BY SIM												
Surr: 2-Fluorobiphenyl	66.0	%REC	1		53-106				SW8270C	12/8/2021 18:54/jph	SV5975.I_211208A : 20	161925
Surr: Nitrobenzene-d5	67.0	%REC	1		55-111				SW8270C	12/8/2021 18:54/jph	SV5975.I_211208A : 20	161925
Surr: Terphenyl-d14	108.0	%REC	1		58-132				SW8270C	12/8/2021 18:54/jph	SV5975.I_211208A : 20	161925

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B21120396-002
Client: AECOM - Honolulu
Collection Date: 12/02/2021 15:36
Client Sample ID: ERH2015 Trip Blank Client
Date Received: 12/06/2021
Project: CV18F0126/60571032.02.20.01
Report Date: 01/10/2022
Matrix: Trip Blank
Revised Date: 03/18/2022

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
VOLATILE ORGANIC COMPOUNDS												
Benzene	ND	ug/L	1	U	1.0	0.20	0.05		SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
Ethylbenzene	ND	ug/L	1	U	1.0	0.20	0.05		SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
Toluene	ND	ug/L	1	U	1.0	0.20	0.06		SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
m+p-Xylenes	ND	ug/L	1	U	1.0	0.20	0.07		SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
o-Xylene	ND	ug/L	1	U	1.0	0.20	0.04		SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
Xylenes, Total	ND	ug/L	1	U	1.0	0.20	0.04		SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
Surr: 1,2-Dichloroethane-d4	96.0	%REC	1		81-118				SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
Surr: Dibromofluoromethane	100.0	%REC	1		80-119				SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
Surr: p-Bromofluorobenzene	103.0	%REC	1		85-114				SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
Surr: Toluene-d8	95.0	%REC	1		89-112				SW8260B	12/6/2021 15:35/sbd	SV5972.I_211206A : 8	R371353
PETROLEUM HYDROCARBONS-VOLATILE												
C6 to C10	ND	ug/L	1	U	20	8.7	2.3		SW8015C	12/10/2021 20:38/jp	PE 1_211210A : 14	R371606
Total Purgeable Hydrocarbons	ND	ug/L	1	U	20	10	3.6		SW8015C	12/10/2021 20:38/jp	PE 1_211210A : 14	R371606
Surr: Trifluorotoluene	79.0	%REC	1		70-130				SW8015C	12/10/2021 20:38/jp	PE 1_211210A : 14	R371606

- 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: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: SV5972.I_211206A: 4 **SampType:** Method Blank **Batch ID:** R371353
Method: SW8260B **Analysis Date:** 12/06/2021 13:21 **Prep Date:**
Lab ID: MBLK120621 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Ethylbenzene	ND	0.50									
Toluene	ND	0.50									
m+p-Xylenes	ND	0.50									
o-Xylene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 1,2-Dichloroethane-d4	9.4	0.50	10		94.0	81	118				
Surr: Dibromofluoromethane	10	0.50	10		100.0	80	119				
Surr: p-Bromofluorobenzene	10	0.50	10		100.0	85	114				
Surr: Toluene-d8	9.4	0.50	10		94.0	89	112				

Associated Samples: **B21120396-001C, B21120396-002A**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: SV5972.I_211206A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R371353
Method: SW8260B **Analysis Date:** 12/06/2021 12:31 **Prep Date:**
Lab ID: LCS120621 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	4.9	0.50	5.0		98.0	79	120				
Ethylbenzene	4.8	0.50	5.0		97.0	79	121				
Toluene	4.9	0.50	5.0		98.0	80	121				
m+p-Xylenes	9.7	0.50	10		97.0	80	121				
o-Xylene	5.0	0.50	5.0		99.0	78	122				
Xylenes, Total	15	0.50	15		97.0	79	121				
Surr: 1,2-Dichloroethane-d4	9.4	0.50	10		94.0	81	118				
Surr: Dibromofluoromethane	9.9	0.50	10		99.0	80	119				
Surr: p-Bromofluorobenzene	9.9	0.50	10		99.0	85	114				
Surr: Toluene-d8	9.4	0.50	10		94.0	89	112				

Associated Samples: **B21120396-001C, B21120396-002A**

Run ID: Run Order: SV5972.I_211206A: 16 **SampType:** Sample Matrix Spike **Batch ID:** R371353
Method: SW8260B **Analysis Date:** 12/06/2021 18:30 **Prep Date:**
Lab ID: B21120381-004CMS **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	0.0	100.0	79	120				
Ethylbenzene	4.9	0.50	5.0	0.0	97.0	79	121				
Toluene	5.0	0.50	5.0	0.0	101.0	80	121				
m+p-Xylenes	9.7	0.50	10	0.0	97.0	80	121				
o-Xylene	5.0	0.50	5.0	0.0	100.0	78	122				
Xylenes, Total	15	0.50	15	0.0	98.0	79	121				
Surr: 1,2-Dichloroethane-d4	9.3	0.50	10	0.0	93.0	81	118				
Surr: Dibromofluoromethane	9.9	0.50	10	0.0	99.0	80	119				
Surr: p-Bromofluorobenzene	10	0.50	10	0.0	102.0	85	114				

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: SV5972.I_211206A: 16 **SampType:** Sample Matrix Spike **Batch ID:** R371353
Method: SW8260B **Analysis Date:** 12/06/2021 18:30 **Prep Date:**
Lab ID: B21120381-004CMS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Surr: Toluene-d8	9.4	0.50	10	0.0	94.0	89	112				

Associated Samples: **B21120396-001C, B21120396-002A**

Run ID: Run Order: SV5972.I_211206A: 17 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R371353
Method: SW8260B **Analysis Date:** 12/06/2021 18:56 **Prep Date:**
Lab ID: B21120381-004CMSD **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	4.9	0.50	5.0	0.0	98.0	79	120	5.0	1.5	20.0	
Ethylbenzene	4.8	0.50	5.0	0.0	97.0	79	121	4.9	0.7	20.0	
Toluene	5.0	0.50	5.0	0.0	100.0	80	121	5.0	0.5	20.0	
m+p-Xylenes	9.4	0.50	10	0.0	94.0	80	121	9.7	2.9	20.0	
o-Xylene	4.8	0.50	5.0	0.0	97.0	78	122	5.0	3.6	20.0	
Xylenes, Total	14	0.50	15	0.0	95.0	79	121	15	3.2	20.0	
Surr: 1,2-Dichloroethane-d4	9.5	0.50	10	0.0	95.0	81	118	0.0			
Surr: Dibromofluoromethane	10	0.50	10	0.0	100.0	80	119	0.0			
Surr: p-Bromofluorobenzene	10	0.50	10	0.0	103.0	85	114	0.0			
Surr: Toluene-d8	9.6	0.50	10	0.0	96.0	89	112	0.0			

Associated Samples: **B21120396-001C, B21120396-002A**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: SV5972.I_211206A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371353
Method: SW8260B **Analysis Date:** 12/06/2021 12:06 **Prep Date:**
Lab ID: CCV120621 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	4.8	0.50	5.0		97.0	80	120				
Ethylbenzene	4.6	0.50	5.0		92.0	80	120				
Toluene	4.7	0.50	5.0		94.0	80	120				
m+p-Xylenes	9.4	0.50	10		94.0	80	120				
o-Xylene	4.7	0.50	5.0		93.0	80	120				
Xylenes, Total	14	0.50	15		94.0	80	120				
Surr: 1,2-Dichloroethane-d4	9.5	0.50	10		95.0	80	120				
Surr: Dibromofluoromethane	10	0.50	10		100.0	80	120				
Surr: p-Bromofluorobenzene	9.9	0.50	10		99.0	80	120				
Surr: Toluene-d8	9.3	0.50	10		93.0	80	120				

Associated Samples: **B21120396-001C, B21120396-002A**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: SV5972.I_211206A: 18 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371353
Method: SW8260B **Analysis Date:** 12/06/2021 19:21 **Prep Date:**
Lab ID: CCV120621_CLOSING **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	4.8	0.50	5.0		96.0	50	150				
Ethylbenzene	4.7	0.50	5.0		94.0	50	150				
Toluene	4.8	0.50	5.0		96.0	50	150				
m+p-Xylenes	9.4	0.50	10		94.0	50	150				
o-Xylene	4.7	0.50	5.0		93.0	50	150				
Xylenes, Total	14	0.50	15		94.0	50	150				
Surr: 1,2-Dichloroethane-d4	9.3	0.50	10		93.0	50	150				
Surr: Dibromofluoromethane	10	0.50	10		100.0	50	150				
Surr: p-Bromofluorobenzene	9.8	0.50	10		98.0	50	150				
Surr: Toluene-d8	9.5	0.50	10		95.0	50	150				

Associated Samples: **B21120396-001C, B21120396-002A**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_211207B: 6 **SampType:** Method Blank **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/08/2021 02:13 **Prep Date:** 12/06/2021 15:40
Lab ID: MB-161934 **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	ND	0.15									
Oil Range Hydrocarbons (C24 to C40)	ND	0.15									
Total Extractable Hydrocarbons	ND	0.15									
Surr: o-Terphenyl	0.19	0.0020	0.20		95.0	56	125				
Surr: n-Triacontane	0.093	0.0020	0.10		93.0	50	150				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211209A: 6 **SampType:** Method Blank **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/09/2021 17:08 **Prep Date:** 12/06/2021 15:40
Lab ID: MB-161934 **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)	0.20	0.0020	0.20		99.0	56	125				
Surr: n-Triacontane (SGT)	0.095	0.0020	0.10		95.0	50	150				

Associated Samples: **B21120396-001B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_211207B: 4 **SampType:** Laboratory Control Sample **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/08/2021 00:46 **Prep Date:** 12/06/2021 15:40
Lab ID: LCS-161934 **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		85.0	36	132				
Total Extractable Hydrocarbons	14	0.30	15		91.0	60	132				
Surr: o-Terphenyl	0.19	0.0020	0.20		93.0	56	125				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211207B: 5 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/08/2021 01:30 **Prep Date:** 12/06/2021 15:41
Lab ID: LCSD-161934 **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		84.0	36	132	13	1.2	20.0	
Total Extractable Hydrocarbons	13	0.30	15		90.0	60	132	14	1.2	20.0	
Surr: o-Terphenyl	0.18	0.0020	0.20		90.0	56	125	0.0			

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211207B: 20 **SampType:** Laboratory Control Sample **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/08/2021 18:01 **Prep Date:** 12/06/2021 15:41
Lab ID: LCS-161934-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)	5.0	0.30	5.0		101.0	41	113				
Surr: n-Triacontane	0.094	0.0020	0.10		94.0	50	150				

Associated Samples: **B21120396-001B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_211207B: 21 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/08/2021 19:28 **Prep Date:** 12/06/2021 15:41
Lab ID: LCSD-161934-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)	4.7	0.30	5.0		95.0	41	113	5.0	5.7	20.0	
Surr: n-Triacontane	0.090	0.0020	0.10		90.0	50	150	0.0			

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211209A: 4 **SampType:** Laboratory Control Sample **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/09/2021 15:43 **Prep Date:** 12/06/2021 15:40
Lab ID: LCS-161934 **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		88.0	36	132				
Total Extractable Hydrocarbons (SGT)	14	0.30	15		94.0	60	132				
Surr: o-Terphenyl (SGT)	0.20	0.0020	0.20		102.0	56	125				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211209A: 5 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/09/2021 16:25 **Prep Date:** 12/06/2021 15:41
Lab ID: LCSD-161934 **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		87.0	36	132	13	1.7	20.0	
Total Extractable Hydrocarbons (SGT)	14	0.30	15		92.0	60	132	14	1.6	20.0	
Surr: o-Terphenyl (SGT)	0.19	0.0020	0.20		96.0	56	125	0.0			

Associated Samples: **B21120396-001B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_211209A: 21 **SampType:** Laboratory Control Sample **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/10/2021 08:11 **Prep Date:** 12/06/2021 15:41
Lab ID: LCS-161934-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)	5.3	0.30	5.0		107.0	41	113				
Surr: n-Triacontane (SGT)	0.099	0.0020	0.10		99.0	50	150				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211209A: 22 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/10/2021 09:37 **Prep Date:** 12/06/2021 15:41
Lab ID: LCSD-161934-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)	5.2	0.30	5.0		103.0	41	113	5.3	3.2	20.0	
Surr: n-Triacontane (SGT)	0.096	0.0020	0.10		96.0	50	150	0.0			

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211207B: 10 **SampType:** Sample Matrix Spike **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/08/2021 06:32 **Prep Date:** 12/06/2021 15:41
Lab ID: B21120381-003AMS **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)	14	0.30	15	0.11	92.0	36	132				
Total Extractable Hydrocarbons	15	0.30	15	0.47	98.0	60	132				
Surr: o-Terphenyl	0.19	0.0020	0.19	0.0	98.0	56	125				

Associated Samples: **B21120396-001B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_211207B: 19 **SampType:** Sample Matrix Spike **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/08/2021 16:34 **Prep Date:** 12/06/2021 15:41
Lab ID: B21120381-004BMS-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)	5.0	0.30	5.0	0.71	88.0	41	113				
Surr: n-Triacontane	0.090	0.0020	0.099	0.0	91.0	50	150				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211209A: 10 **SampType:** Sample Matrix Spike **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/09/2021 20:44 **Prep Date:** 12/06/2021 15:41
Lab ID: B21120381-003AMS **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)	12	0.30	15	0.0	83.0	36	132				
Total Extractable Hydrocarbons (SGT)	13	0.30	15	0.0	89.0	60	132				
Surr: o-Terphenyl (SGT)	0.18	0.0020	0.19	0.0	91.0	56	125				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211209A: 20 **SampType:** Sample Matrix Spike **Batch ID:** 161934
Method: SW8015C **Analysis Date:** 12/10/2021 06:45 **Prep Date:** 12/06/2021 15:41
Lab ID: B21120381-004BMS-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	0.0	94.0	41	113				
Surr: n-Triacontane (SGT)	0.086	0.0020	0.099	0.0	87.0	50	150				

Associated Samples: **B21120396-001B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: PE 1_211210A: 4 **SampType:** Method Blank **Batch ID:** R371606
Method: SW8015C **Analysis Date:** 12/10/2021 12:03 **Prep Date:**
Lab ID: MBLK_1210PE106r **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	20	1.0	25		81.0	70	130				

Associated Samples: **B21120396-001D, B21120396-002B**

Run ID: Run Order: PE 1_211210A: 18 **SampType:** Method Blank **Batch ID:** R371606
Method: SW8015C **Analysis Date:** 12/10/2021 23:29 **Prep Date:**
Lab ID: MBLK_1210PE126r **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	19	1.0	25		78.0	70	130				

Associated Samples: **B21120396-001D, B21120396-002B**

Run ID: Run Order: PE 1_211210A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R371606
Method: SW8015C **Analysis Date:** 12/10/2021 11:29 **Prep Date:**
Lab ID: LCS_1210PE105r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	136	20	170		80.0	78	122				
Total Purgeable Hydrocarbons	166	20	200		83.0	70	130				
Surr: Trifluorotoluene	22	1.0	25		87.0	70	130				

Associated Samples: **B21120396-001D, B21120396-002B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: PE 1_211210A: 17 **SampType:** Laboratory Control Sample **Batch ID:** R371606
Method: SW8015C **Analysis Date:** 12/10/2021 22:55 **Prep Date:**
Lab ID: LCS_1210PE125r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	175	20	170		103.0	78	122				
Total Purgeable Hydrocarbons	213	20	200		107.0	70	130				
Surr: Trifluorotoluene	22	1.0	25		89.0	70	130				

Associated Samples: **B21120396-001D, B21120396-002B**

Run ID: Run Order: PE 1_211210A: 20 **SampType:** Sample Matrix Spike **Batch ID:** R371606
Method: SW8015C **Analysis Date:** 12/11/2021 01:12 **Prep Date:**
Lab ID: B21120381-005DMS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	171	20	170	0.0	100.0	78	122				
Total Purgeable Hydrocarbons	207	20	200	0.0	104.0	70	130				
Surr: Trifluorotoluene	22	1.0	25	0.0	90.0	70	130				

Associated Samples: **B21120396-001D, B21120396-002B**

Run ID: Run Order: PE 1_211210A: 21 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R371606
Method: SW8015C **Analysis Date:** 12/11/2021 01:47 **Prep Date:**
Lab ID: B21120381-005DMSD **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	170	20	170	0.0	100.0	78	122	171	0.2	20.0	
Total Purgeable Hydrocarbons	207	20	200	0.0	103.0	70	130	207	0.2	20.0	
Surr: Trifluorotoluene	22	1.0	25	0.0	90.0	70	130	0.0			

Associated Samples: **B21120396-001D, B21120396-002B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_220314A: 5 **SampType:** Method Blank **Batch ID:** 164471
Method: SW8015C **Analysis Date:** 03/14/2022 14:27 **Prep Date:** 03/13/2022 12:34
Lab ID: MB-164471 **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		89.0	56	125				
Surr: n-Triacontane	0.085	0.0020	0.10		85.0	50	150				

Associated Samples: **B21120396-001E**

Run ID: Run Order: GCFID-HP5-B_220314A: 3 **SampType:** Laboratory Control Sample **Batch ID:** 164471
Method: SW8015C **Analysis Date:** 03/14/2022 13:02 **Prep Date:** 03/13/2022 12:34
Lab ID: LCS-164471 **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		89.0	36	132				
Total Extractable Hydrocarbons	14	0.30	15		95.0	60	132				
Surr: o-Terphenyl	0.20	0.0020	0.20		99.0	56	125				

Associated Samples: **B21120396-001E**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_220314A: 4 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 164471
Method: SW8015C **Analysis Date:** 03/14/2022 13:45 **Prep Date:** 03/13/2022 12:34
Lab ID: LCSD-164471 **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		88.0	36	132	13	1.5	20.0	
Total Extractable Hydrocarbons	14	0.30	15		94.0	60	132	14	1.6	20.0	
Surr: o-Terphenyl	0.20	0.0020	0.20		98.0	56	125	0.0			

Associated Samples: **B21120396-001E**

Run ID: Run Order: GCFID-HP5-B_220314A: 24 **SampType:** Laboratory Control Sample **Batch ID:** 164471
Method: SW8015C **Analysis Date:** 03/15/2022 11:06 **Prep Date:** 03/13/2022 12:35
Lab ID: LCS-164471-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)	4.9	0.30	5.0		98.0	41	113				
Surr: n-Triacontane	0.081	0.0020	0.10		81.0	50	150				

Associated Samples: **B21120396-001E**

Run ID: Run Order: GCFID-HP5-B_220314A: 25 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 164471
Method: SW8015C **Analysis Date:** 03/15/2022 12:31 **Prep Date:** 03/13/2022 12:34
Lab ID: LCSD-164471-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)	5.0	0.30	5.0		101.0	41	113	4.9	2.6	20.0	
Surr: n-Triacontane	0.086	0.0020	0.10		86.0	50	150	0.0			

Associated Samples: **B21120396-001E**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_220314A: 19 **SampType:** Sample Matrix Spike **Batch ID:** 164471
Method: SW8015C **Analysis Date:** 03/15/2022 03:59 **Prep Date:** 03/13/2022 12:35
Lab ID: B22030703-041CMS **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	12	0.30	14	0.29	85.0	36	132				
Total Extractable Hydrocarbons	13	0.30	14	0.40	91.0	60	132				
Surr: o-Terphenyl	0.18	0.0020	0.19	0.0	94.0	56	125				

Associated Samples: **B21120396-001E**

Run ID: Run Order: GCFID-HP5-B_220314A: 21 **SampType:** Sample Matrix Spike **Batch ID:** 164471
Method: SW8015C **Analysis Date:** 03/15/2022 07:33 **Prep Date:** 03/13/2022 12:35
Lab ID: B22030703-042AMS-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)	4.9	0.30	4.8	0.17	99.0	41	113				
Surr: n-Triacontane	0.079	0.0020	0.095	0.0	83.0	50	150				

Associated Samples: **B21120396-001E**

Run ID: Run Order: GCFID-HP5-B_211207B: 13 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371406
Method: SW8015C **Analysis Date:** 12/08/2021 10:08 **Prep Date:**
Lab ID: CCV_1207HP533r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.0	0.30	5.0		100.0	80	120				
Surr: n-Triacontane	0.21	0.0020	0.20		106.0	80	120				

Associated Samples: **B21120396-001B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_211207B: 14 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371406
Method: SW8015C **Analysis Date:** 12/08/2021 10:51 **Prep Date:**
Lab ID: CCV_1207HP534r **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		103.0	80	120				
Total Extractable Hydrocarbons	16	0.30	15		107.0	80	120				
Surr: o-Terphenyl	0.21	0.0020	0.20		107.0	80	120				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211207B: 23 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371406
Method: SW8015C **Analysis Date:** 12/08/2021 21:39 **Prep Date:**
Lab ID: CCV_1207HP549r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.1	0.30	5.0		102.0	80	120				
Surr: n-Triacontane	0.21	0.0020	0.20		106.0	80	120				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211207B: 24 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371406
Method: SW8015C **Analysis Date:** 12/08/2021 22:22 **Prep Date:**
Lab ID: CCV_1207HP550r **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		99.0	80	120				
Total Extractable Hydrocarbons	15	0.30	15		102.0	80	120				
Surr: o-Terphenyl	0.20	0.0020	0.20		102.0	80	120				

Associated Samples: **B21120396-001B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_211209A: 14 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371557
Method: SW8015C **Analysis Date:** 12/10/2021 01:02 **Prep Date:**
Lab ID: CCV_1209HP521r-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		95.0	80	120				
Surr: n-Triacontane	0.21	0.0020	0.20		105.0	80	120				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211209A: 15 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371557
Method: SW8015C **Analysis Date:** 12/10/2021 01:45 **Prep Date:**
Lab ID: CCV_1209HP522r **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		102.0	80	120				
Total Extractable Hydrocarbons	16	0.30	15		105.0	80	120				
Surr: o-Terphenyl	0.21	0.0020	0.20		104.0	80	120				

Associated Samples: **B21120396-001B**

Run ID: Run Order: GCFID-HP5-B_211209A: 24 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371557
Method: SW8015C **Analysis Date:** 12/10/2021 11:46 **Prep Date:**
Lab ID: CCV_1209HP536r-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	0.22	0.0020	0.20		108.0	80	120				

Associated Samples: **B21120396-001B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_211209A: 25 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371557
Method: SW8015C **Analysis Date:** 12/10/2021 12:29 **Prep Date:**
Lab ID: CCV_1209HP537r **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		100.0	80	120				
Total Extractable Hydrocarbons	16	0.30	15		104.0	80	120				
Surr: o-Terphenyl	0.20	0.0020	0.20		102.0	80	120				

Associated Samples: **B21120396-001B**

Run ID: Run Order: PE 1_211210A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371606
Method: SW8015C **Analysis Date:** 12/10/2021 10:55 **Prep Date:**
Lab ID: CCV_1210PE104r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	175	20	168		104.0	80	120				
Total Purgeable Hydrocarbons	209	20	200		105.0	80	120				
Surr: Trifluorotoluene	24	1.0	25		95.0	80	120				

Associated Samples: **B21120396-001D, B21120396-002B**

Run ID: Run Order: PE 1_211210A: 16 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371606
Method: SW8015C **Analysis Date:** 12/10/2021 22:21 **Prep Date:**
Lab ID: CCV_1210PE124r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	170	20	168		101.0	80	120				
Total Purgeable Hydrocarbons	204	20	200		102.0	80	120				
Surr: Trifluorotoluene	22	1.0	25		90.0	80	120				

Associated Samples: **B21120396-001D, B21120396-002B**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_220314A: 13 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376137
Method: SW8015C **Analysis Date:** 03/14/2022 21:33 **Prep Date:**
Lab ID: CCV_0314HP520r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.1	0.30	5.0		102.0	80	120				
Surr: n-Triacontane	0.19	0.0020	0.20		95.0	80	120				

Associated Samples: **B21120396-001E**

Run ID: Run Order: GCFID-HP5-B_220314A: 14 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376137
Method: SW8015C **Analysis Date:** 03/14/2022 22:16 **Prep Date:**
Lab ID: CCV_0314HP521r **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	14	0.30	15		95.0	80	120				
Total Extractable Hydrocarbons	15	0.30	15		98.0	80	120				
Surr: o-Terphenyl	0.20	0.0020	0.20		101.0	80	120				

Associated Samples: **B21120396-001E**

Run ID: Run Order: GCFID-HP5-B_220314A: 22 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376137
Method: SW8015C **Analysis Date:** 03/15/2022 08:58 **Prep Date:**
Lab ID: CCV_0314HP536r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.4	0.30	5.0		107.0	80	120				
Surr: n-Triacontane	0.19	0.0020	0.20		97.0	80	120				

Associated Samples: **B21120396-001E**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: GCFID-HP5-B_220314A: 23 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376137
Method: SW8015C **Analysis Date:** 03/15/2022 09:41 **Prep Date:**
Lab ID: CCV_0314HP537r **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	14	0.30	15		96.0	80	120				
Total Extractable Hydrocarbons	15	0.30	15		99.0	80	120				
Surr: o-Terphenyl	0.20	0.0020	0.20		101.0	80	120				

Associated Samples: **B21120396-001E**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: SV5975.I_211208A: 11 **SampType:** Method Blank **Batch ID:** 161925
Method: SW8270C **Analysis Date:** 12/08/2021 14:01 **Prep Date:** 12/06/2021 11:08
Lab ID: MB-161925 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	0.10									
2-Methylnaphthalene	ND	0.10									
Naphthalene	ND	0.10									

Associated Samples: **B21120396-001A**

Run ID: Run Order: SV5975.I_211208A: 12 **SampType:** Method Blank **Batch ID:** 161925
Method: SW8270C **Analysis Date:** 12/08/2021 14:33 **Prep Date:** 12/06/2021 11:08
Lab ID: MB-161925 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	57	2.0	100		57.0	53	106				
Surr: Nitrobenzene-d5	73	2.0	100		73.0	55	111				
Surr: Terphenyl-d14	114	2.0	100		114.0	58	132				

Associated Samples: **B21120396-001A**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: SV5975.I_211208A: 13 **SampType:** Laboratory Control Sample **Batch ID:** 161925
Method: SW8270C **Analysis Date:** 12/08/2021 15:06 **Prep Date:** 12/06/2021 11:08
Lab ID: LLCS-161925 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1-Methylnaphthalene	3.3	0.10	5.0		65.0	41	115				
2-Methylnaphthalene	3.4	0.10	5.0		68.0	39	114				
Naphthalene	3.3	0.10	5.0		65.0	43	114				
Surr: 2-Fluorobiphenyl	3.7	0.10	5.0		75.0	53	106				
Surr: Nitrobenzene-d5	3.5	0.10	5.0		70.0	55	111				
Surr: Terphenyl-d14	4.9	0.10	5.0		98.0	58	132				

Associated Samples: **B21120396-001A**

Run ID: Run Order: SV5975.I_211208A: 14 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 161925
Method: SW8270C **Analysis Date:** 12/08/2021 15:38 **Prep Date:** 12/06/2021 15:03
Lab ID: LLCSD-161925 **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1-Methylnaphthalene	4.2	0.10	5.0		83.0	41	115	3.3	24.0	40.0	
2-Methylnaphthalene	4.2	0.10	5.0		83.0	39	114	3.4	20.0	40.0	
Naphthalene	3.8	0.10	5.0		76.0	43	114	3.3	15.0	40.0	
Surr: 2-Fluorobiphenyl	4.2	0.10	5.0		84.0	53	106	0.0	0.0		
Surr: Nitrobenzene-d5	3.9	0.10	5.0		77.0	55	111	0.0	0.0		
Surr: Terphenyl-d14	5.6	0.10	5.0		111.0	58	132	0.0	0.0		

Associated Samples: **B21120396-001A**

- 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.

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: SV5975.I_211208A: 21 **SampType:** Sample Matrix Spike **Batch ID:** 161925
Method: SW8270C **Analysis Date:** 12/08/2021 19:27 **Prep Date:** 12/06/2021 15:03
Lab ID: B21120396-001ALMS **Units:** ug/L **Prep Method:** SW3510C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1-Methylnaphthalene	3.0	0.11	5.4	0.0	55.0	41	115				
2-Methylnaphthalene	3.0	0.11	5.4	0.0	56.0	39	114				
Naphthalene	2.7	0.11	5.4	0.0	50.0	43	114				
Surr: 2-Fluorobiphenyl	4.0	0.11	5.4	0.0	73.0	53	106				
Surr: Nitrobenzene-d5	4.2	0.11	5.4	0.0	76.0	55	111				
Surr: Terphenyl-d14	5.8	0.11	5.4	0.0	107.0	58	132				

Associated Samples: **B21120396-001A**

Run ID: Run Order: SV5975.I_211208A: 22 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R371450
Method: SW8270C **Analysis Date:** 12/08/2021 19:59 **Prep Date:**
Lab ID: 08-Dec-21_CCV_22 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1-Methylnaphthalene	2.2	0.10	2.0		108.0	50	150				
2-Methylnaphthalene	2.1	0.10	2.0		106.0	50	150				
Naphthalene	2.0	0.10	2.0		100.0	50	150				
Surr: 2-Fluorobiphenyl	1.9	0.10	2.0		97.0	50	150				
Surr: Nitrobenzene-d5	2.0	0.10	2.0		102.0	50	150				
Surr: Terphenyl-d14	1.8	0.10	2.0		89.0	50	150				

Associated Samples: **B21120396-001A**

Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Run ID: Run Order: SV5975.I_211208A: 9 **SampType:** Initial Calibration Verification Standard **Batch ID:** R371450
Method: SW8270C **Analysis Date:** 12/08/2021 12:56 **Prep Date:**
Lab ID: 08-Dec-21_CCV_9 **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1-Methylnaphthalene	2.2	0.10	2.0		110.0	80	120				
2-Methylnaphthalene	2.2	0.10	2.0		108.0	80	120				
Naphthalene	2.1	0.10	2.0		104.0	80	120				
Surr: 2-Fluorobiphenyl	2.0	0.10	2.0		98.0	80	120				
Surr: Nitrobenzene-d5	2.1	0.10	2.0		104.0	80	120				
Surr: Terphenyl-d14	2.1	0.10	2.0		107.0	80	120				

Associated Samples: **B21120396-001A**

Analytical QC Exceptions Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396
Project: CV18F0126/60571032.02.20.01

Revised Date: 03/18/2022
Report Date: 01/10/2022

All quality control measures met criteria; there were no Analytical QC Exceptions.

Preparation and Analysis Dates Report

Work Order: B21120396
Client: AECOM - Honolulu
Project Name: CV18F0126/60571032.02.20.01

Date Revised: 3/18/2022
Report Date: 1/10/2022

Lab ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Method	Prep Date	Prep Batch	Analysis Method	Analysis Date
001A	ERH2016 (RHMW15-05)	12/02/2021 15:36	Ground Water	Low Level PAH		SW3510C	12/06/2021 15:03	161925	SW8270C	12/08/2021 18:54
001B	ERH2016 (RHMW15-05)	12/02/2021 15:36	Ground Water	Diesel Range Organics		SW3520C	12/06/2021 15:42	161934	SW8015C	12/08/2021 15:51
						SW3520C	12/06/2021 15:42	161934	SW8015C	12/10/2021 05:20
001E	ERH2016 (RHMW15-05)	12/02/2021 15:36	Ground Water	Diesel Range Organics		SW3520C	03/13/2022 12:35	164471	SW8015C	03/15/2022 00:25

Chemical Abstracts Service (CAS) Registry Numbers

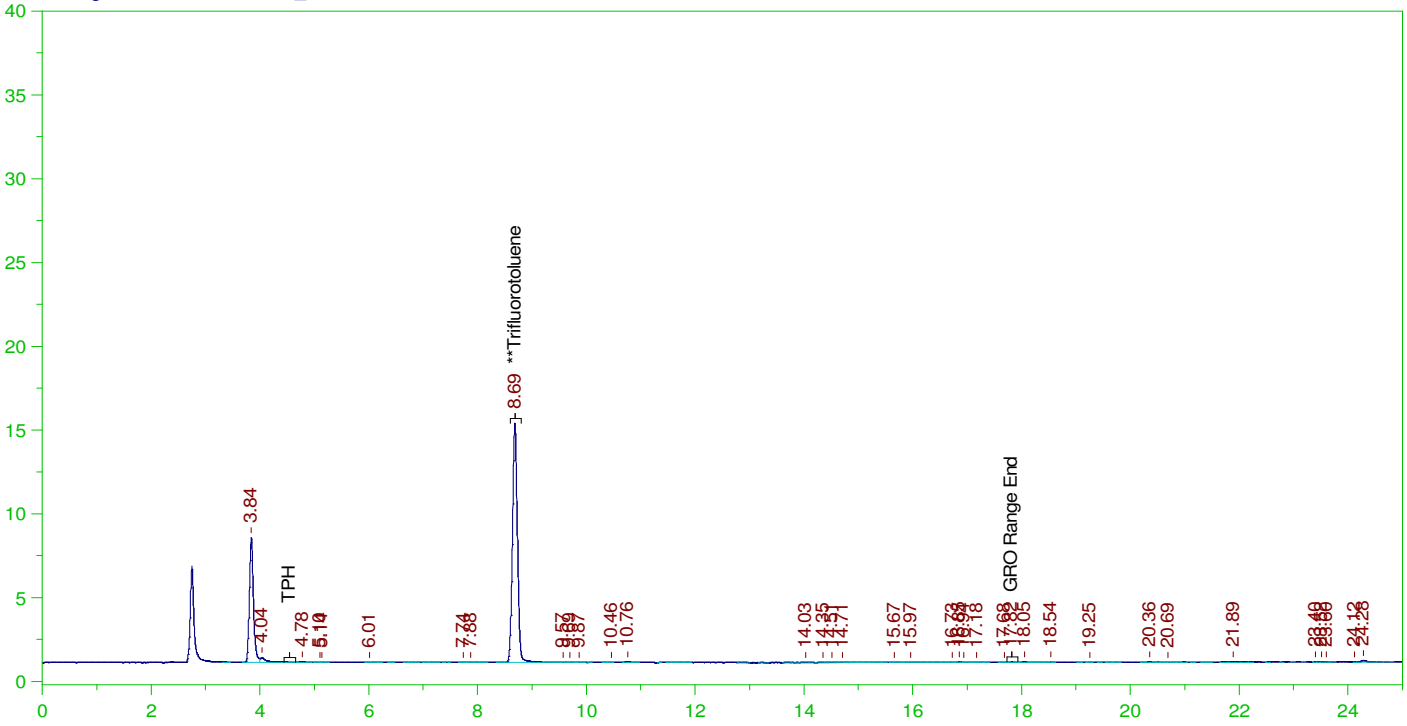
Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B21120396 **Revised Date:** 03/18/2022
Project: CV18F0126/60571032.02.20.01 **Report Date:** 01/10/2022

Analyses	CAS No
VOLATILE ORGANIC COMPOUNDS	
Benzene	71-43-2
Ethylbenzene	100-41-4
Toluene	108-88-3
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 (LOW LEVEL) BY SIM	
1-Methylnaphthalene	90-12-0
2-Methylnaphthalene	91-57-6
Naphthalene	91-20-3

ERH2016 (RHMW15-05)

G:\Org\PE1\DAT\PE1121021_b\1210PE1B.0027.RAW B21120396-001D ;1210PE1 , $HC-8015-GRO-W,



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

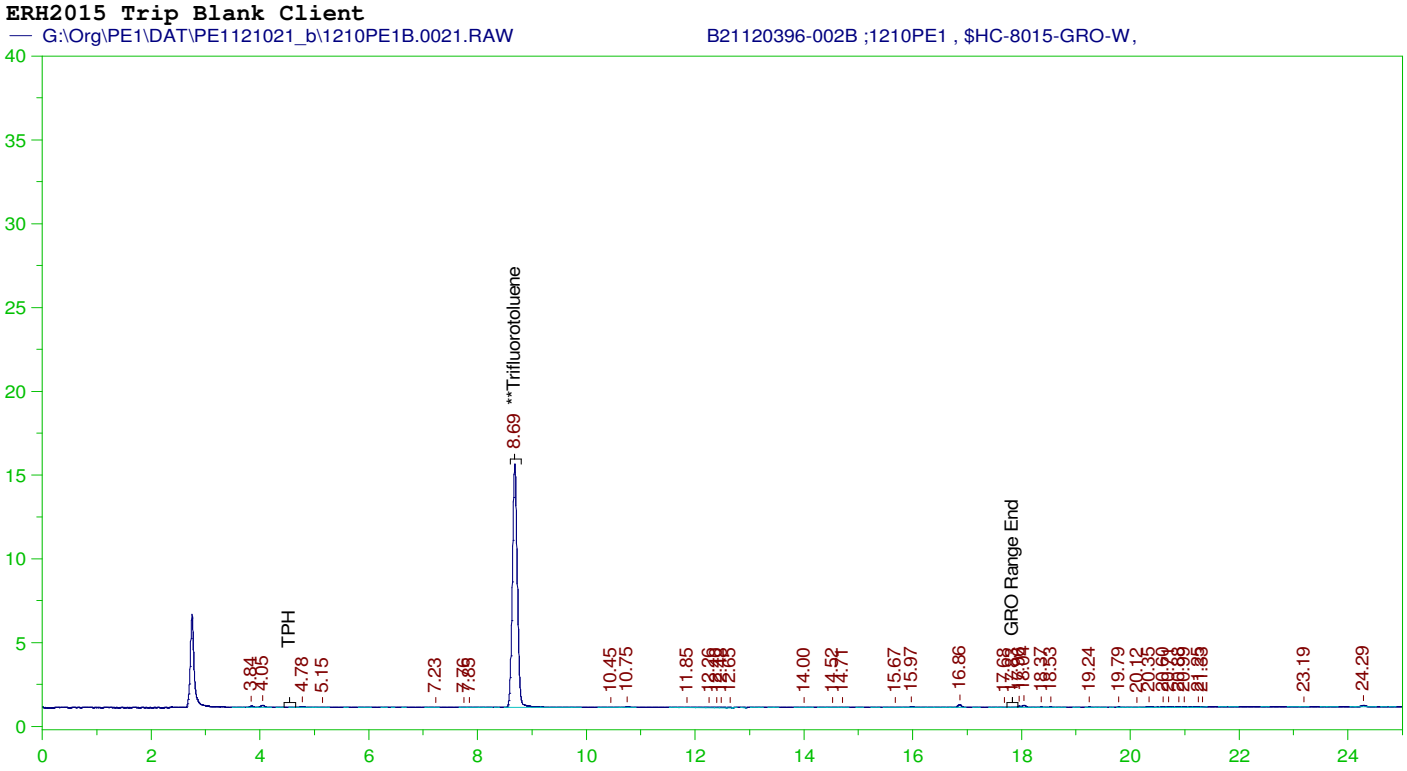
Sample Name: B21120396-001D ;1210PE1 , $HC-8015-GRO-W,
Raw File: G:\Org\PE1\DAT\PE1121021_b\1210PE1B.0027.RAW
Date & Time Acquired: 12/11/2021 12:04:08 AM
Method File: G:\Org\PE1\Methods\211208GROB%.MET
Calibration File: G:\Org\PE1\Cals\211208GRO8015CB.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

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

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**Trifluorotoluene	8.687	25.	19.499	77.99	-

GRO Area:3876.151 GRO Amount: 0.8195102
TPH Area:47567.96 TPH Amount: 10.46149

ERH2015 Trip Blank Client



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B21120396-002B ;1210PE1 , $HC-8015-GRO-W,
Raw File: G:\Org\PE1\DAT\PE1121021_b\1210PE1B.0021.RAW
Date & Time Acquired: 12/10/2021 8:38:39 PM
Method File: G:\Org\PE1\Methods\211208GROB%.MET
Calibration File: G:\Org\PE1\Cals\211208GRO8015CB.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

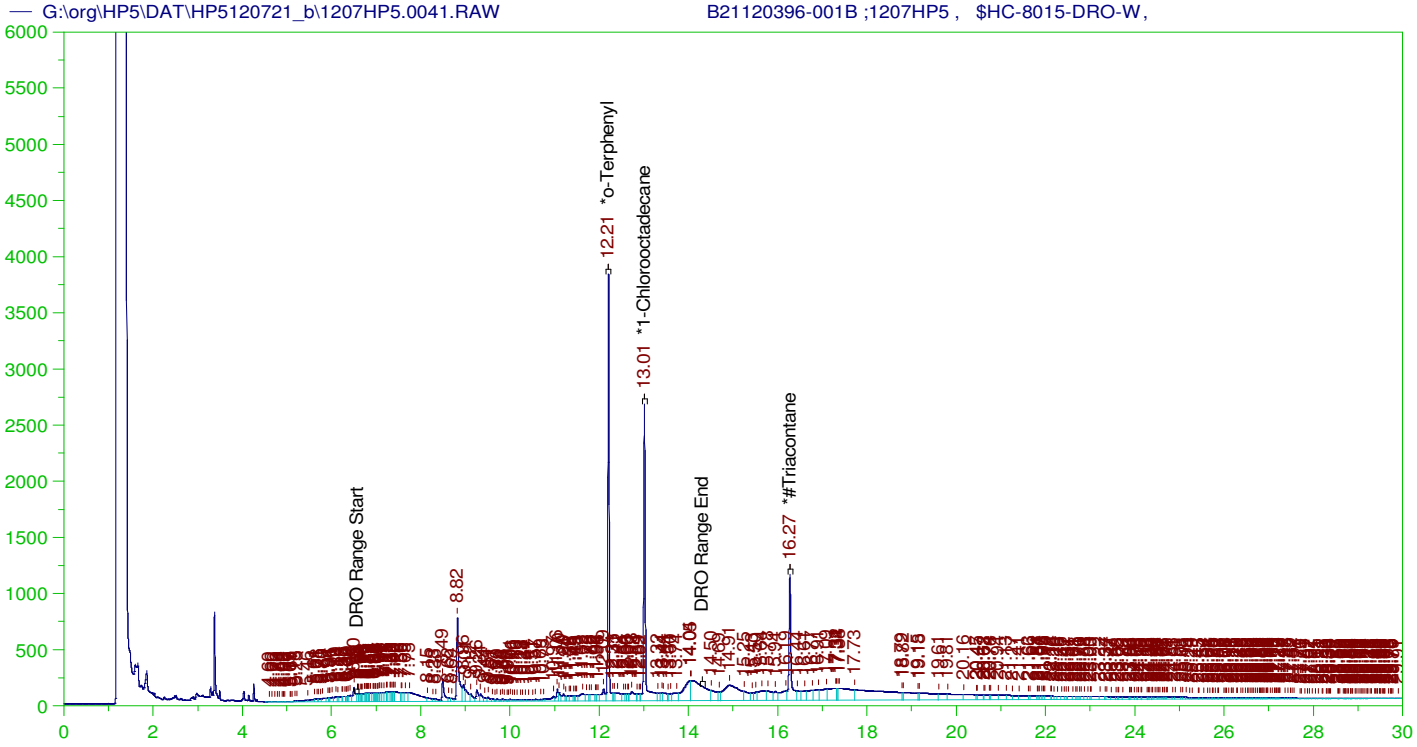
Mean RF for GRO: 945.9678
Mean RF for TPH: 909.3915
Rt range for Gasoline Range Organics: 4.45 to 17.93

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**Trifluorotoluene	8.685	25.	19.707	78.83	-

GRO Area:4628.184 GRO Amount: 0.9785077
TPH Area:9045.011 TPH Amount: 1.989245

ERH2016 (RHMW15-05) Batch ID: 161934

G:\org\HP5\DAT\HP5120721_b\1207HP5.0041.RAW B21120396-001B ;1207HP5 , $HC-8015-DRO-W,



DIESEL RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B21120396-001B ;1207HP5 , $HC-8015-DRO-W,
Raw File: G:\org\HP5\DAT\HP5120721_b\1207HP5.0041.RAW
Date & Time Acquired: 12/8/2021 3:51:49 PM
Method File: G:\Org\HP5\Methods\D3_8015-120724-IE-L%.met
Calibration File: G:\Org\HP5\Cals\SW8015C_DRO211102IE-24-Tri.CAL
Sample Weight: 960 Dilution: 1 S.A.: 1

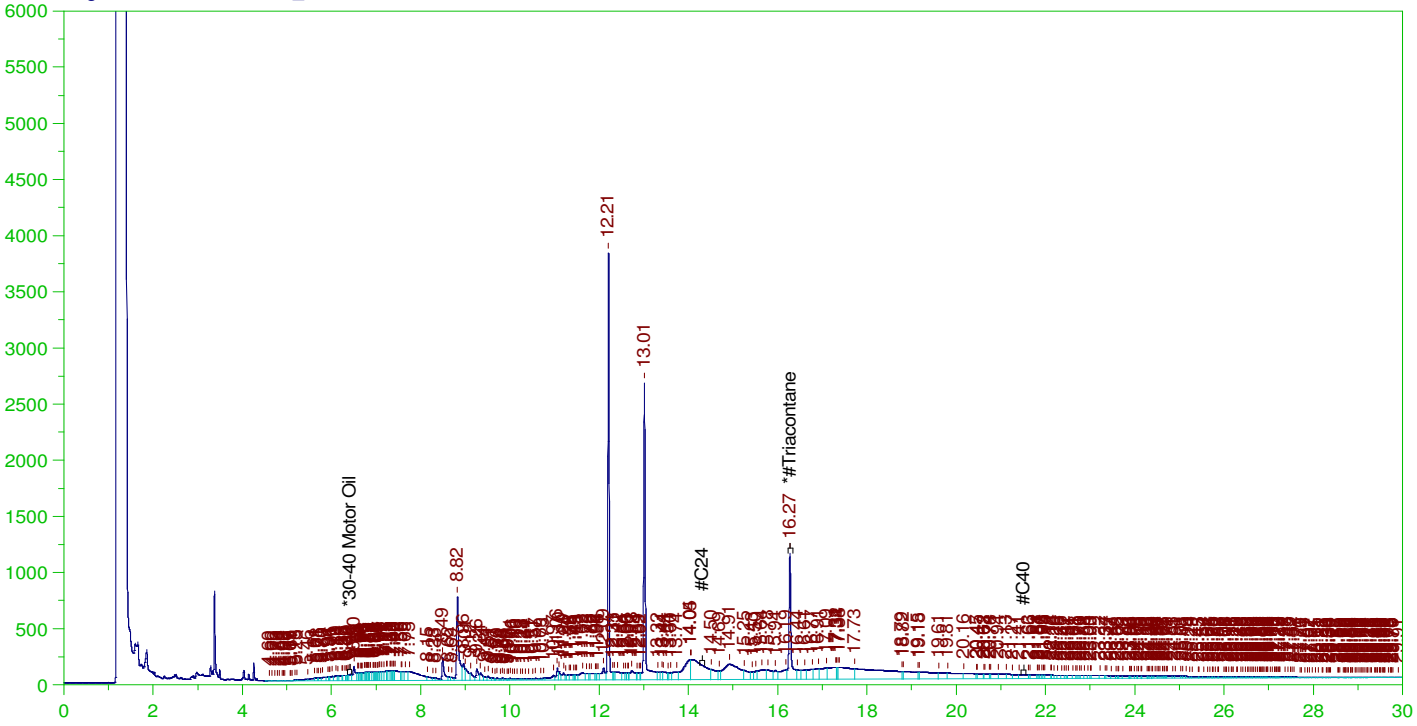
Mean RF for TEH: 31353.19
Rt range for Diesel Range Organics: 6.51 to 14.37

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.205	.208	.224	107.38	-
*1-Chlorooctadecane	13.013	.208	.206	98.68	-
*#Triacontane	16.27	.208	.139	66.62	-

DRO Area:2.776228E+07 DRO Amount: 0.9223635
TEH Area:6.690094E+07 TEH Amount: 2.222692

ERH2016 (RHMW15-05) Batch ID: 161934

G:\org\HP5\DAT\HP5120721_b\1207HP5.0041.RAW B21120396-001B ;1207HP5 , $HC-8015-DRO-W,



RESIDUAL RANGE ORGANICS CHROMATOGRAM

Sample Name: B21120396-001B ;1207HP5 , $HC-8015-DRO-W,
Raw File: G:\org\HP5\DAT\HP5120721_b\1207HP5.0041.RAW
Date & Time Acquired: 12/8/2021 3:51:49 PM
Method File: G:\Org\HP5\Methods\D3_OROS-120724-AG-L%.MET
Calibration File: G:\Org\HP5\Cals\SW8015C_ORO211017AG-SAMP.CAL
Sample Weight: 960 Dilution: 1 S.A.: 1

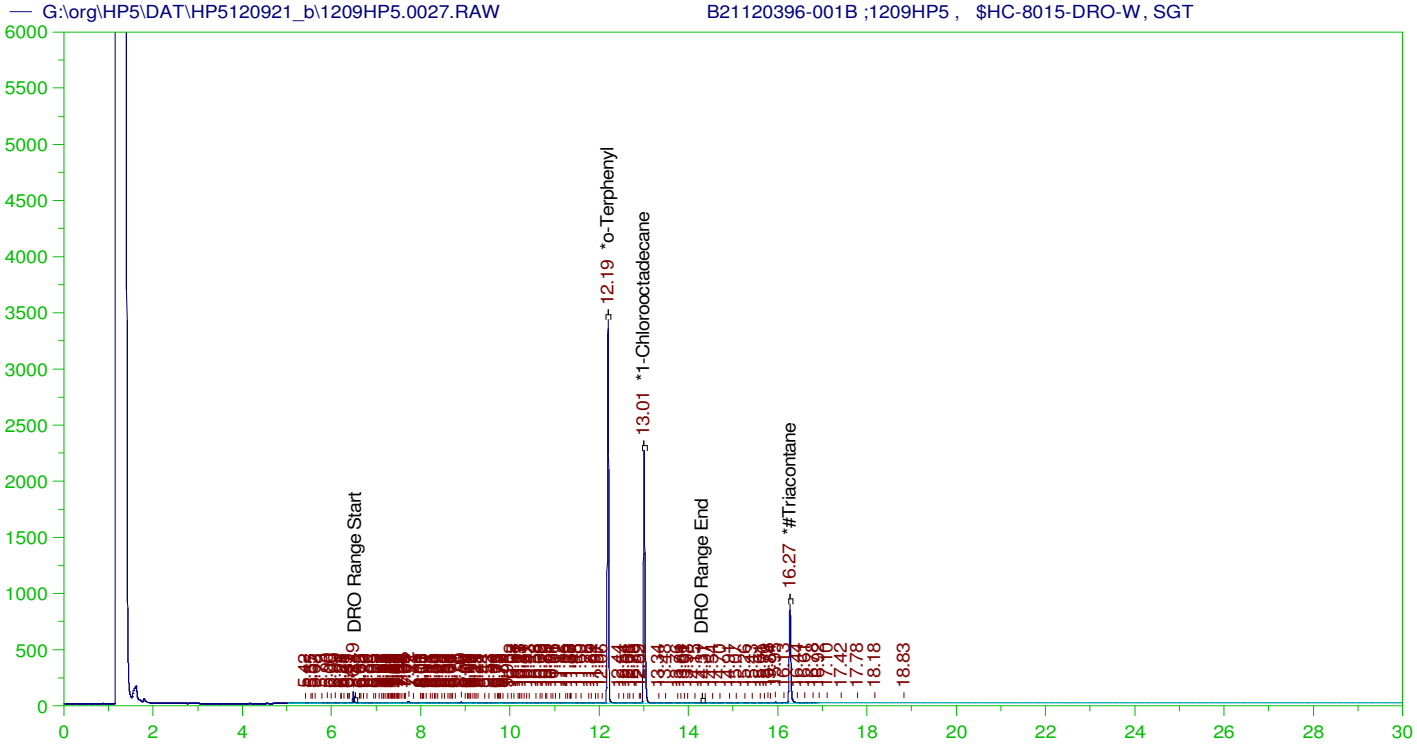
Mean RF for for Residual Range Organics Calculations: 28542.41
Rt range for Residual Range Organics: 14.26 to 21.56

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.27	.521	.139	26.65	-

RRO Area:2.899922E+07 RRO AMOUNT: 1.058338

ERH2016 (RHMW15-05) Batch ID: 161934

G:\org\HP5\DAT\HP5120921_b\1209HP5.0027.RAW B21120396-001B ;1209HP5 , $HC-8015-DRO-W, SGT



DIESEL RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B21120396-001B ;1209HP5 , $HC-8015-DRO-W, SGT
Raw File: G:\org\HP5\DAT\HP5120921_b\1209HP5.0027.RAW
Date & Time Acquired: 12/10/2021 5:20:05 AM
Method File: G:\Org\HP5\Methods\DR_8015-C24T-IF-L%.met
Calibration File: G:\Org\HP5\Cals\SW8015C_DRO211102IF-24-Tri.CAL
Sample Weight: 960 Dilution: 1 S.A.: 1

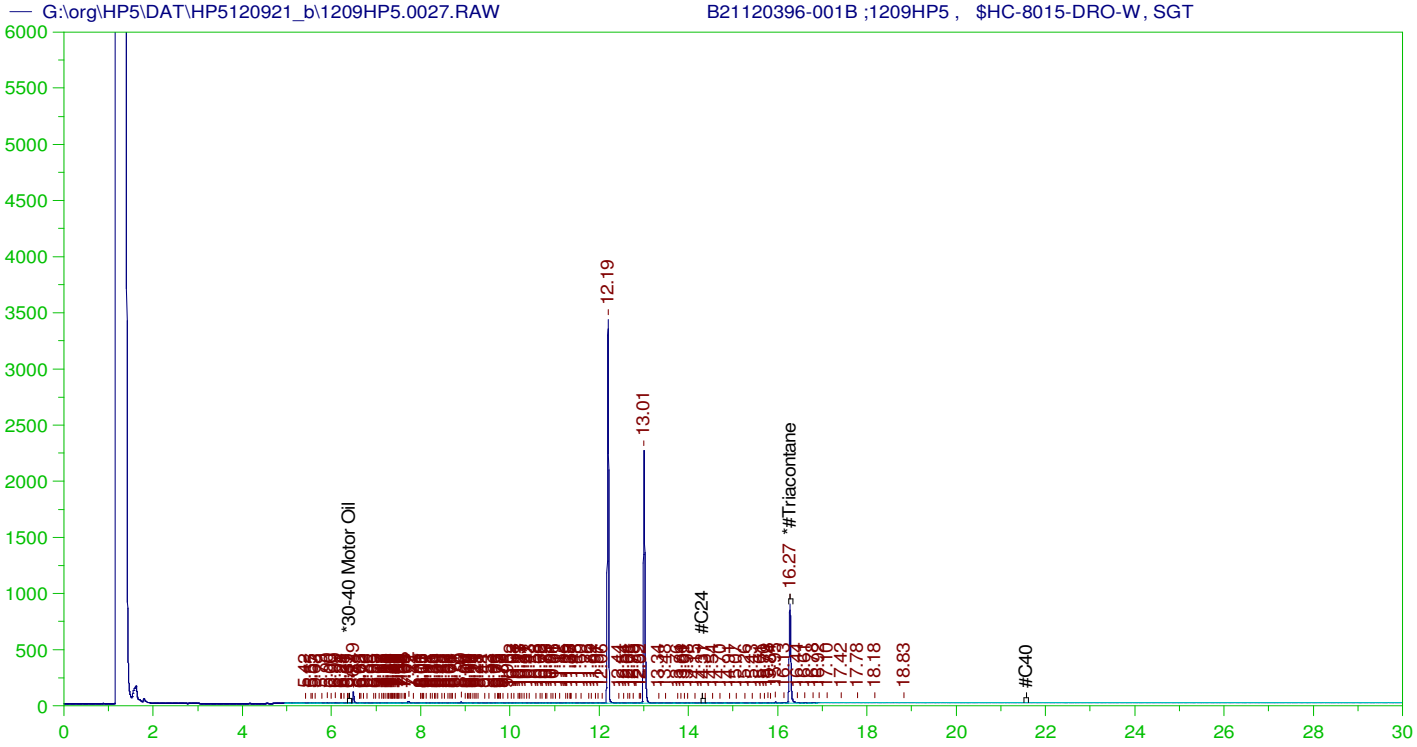
Mean RF for TEH: 31353.19
Rt range for Diesel Range Organics: 6.49 to 14.38

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.194	.208	.194	93.13	-
*1-Chlorooctadecane	13.006	.208	.155	74.22	-
*#Triacontane	16.272	.208	.088	42.23	-

DRO Area:698465.8 DRO Amount: 2.320557E-02
TEH Area:1249452 TEH Amount: 4.151133E-02

ERH2016 (RHMW15-05) Batch ID: 161934

G:\org\HP5\DAT\HP5120921_b\1209HP5.0027.RAW B21120396-001B ;1209HP5 , $HC-8015-DRO-W, SGT



RESIDUAL RANGE ORGANICS CHROMATOGRAM

Sample Name: B21120396-001B ;1209HP5 , $HC-8015-DRO-W, SGT
Raw File: G:\org\HP5\DAT\HP5120921_b\1209HP5.0027.RAW
Date & Time Acquired: 12/10/2021 5:20:05 AM
Method File: G:\Org\HP5\Methods\DR_OROS-AH-L%.MET
Calibration File: G:\Org\HP5\Cals\SW8015C_ORO211017AH-SAMP.CAL
Sample Weight: 960 Dilution: 1 S.A.: 1

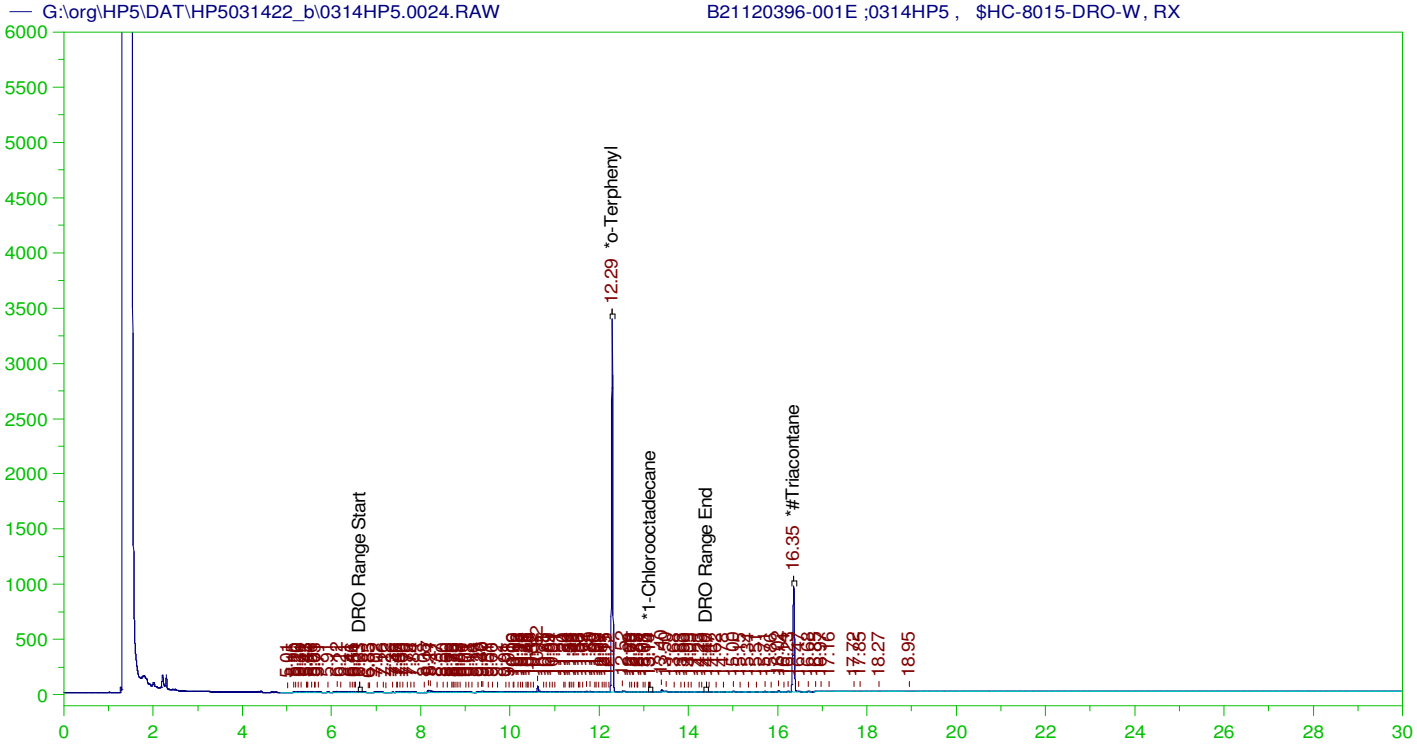
Mean RF for for Residual Range Organics Calculations: 28542.41
Rt range for Residual Range Organics: 14.28 to 21.62

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.272	.521	.088	16.89	-

RRO Area:180972.8 RRO AMOUNT: 6.604673E-03

ERH2016 (RHMW15-05) Batch ID: 164471

G:\org\HP5\DAT\HP5031422_b\0314HP5.0024.RAW B21120396-001E ;0314HP5 , $HC-8015-DRO-W, RX



DIESEL RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B21120396-001E ;0314HP5 , $HC-8015-DRO-W, RX
Raw File: G:\org\HP5\DAT\HP5031422_b\0314HP5.0024.RAW
Date & Time Acquired: 3/15/2022 12:25:28 AM
Method File: G:\Org\HP5\Methods\DR_8015-C24T-JJ-L%.met
Calibration File: G:\Org\HP5\Cals\SW8015C_DRO220111JJ-C24-T.CAL
Sample Weight: 1040 Dilution: 1 S.A.: 1

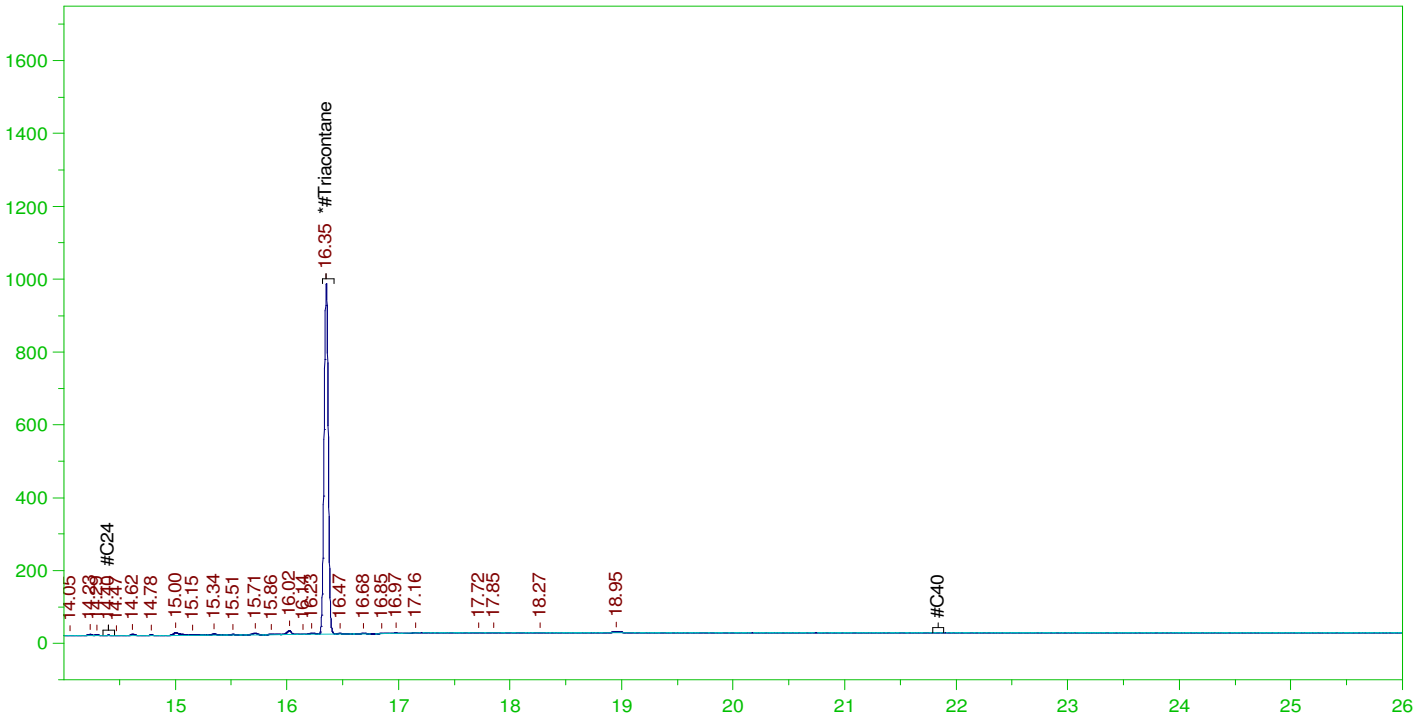
Mean RF for TEH: 32675.36
Rt range for Diesel Range Organics: 6.595 to 14.45

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.289	.192	.168	87.29	-
*1-Chlorooctadecane	13.142	.192	.	.05	-
*#Triacontane	16.352	.192	.08	41.77	-

DRO Area:921603.1 DRO Amount: 2.712003E-02
TEH Area:1203182 TEH Amount: 3.540606E-02

ERH2016 (RHMW15-05) Batch ID: 164471

G:\org\HP5\DAT\HP5031422_b\0314HP5.0024.RAW B21120396-001E ;0314HP5 , $HC-8015-DRO-W, RX



RESIDUAL RANGE ORGANICS CHROMATOGRAM

Sample Name: B21120396-001E ;0314HP5 , $HC-8015-DRO-W, RX
Raw File: G:\org\HP5\DAT\HP5031422_b\0314HP5.0024.RAW
Date & Time Acquired: 3/15/2022 12:25:28 AM
Method File: G:\Org\HP5\Methods\DR_OROS-BJ-L%.MET
Calibration File: G:\Org\HP5\Cals\SW8015C_ORO220111BJ_SAMP.CAL
Sample Weight: 1040 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 26424.55
Rt range for Residual Range Organics: 14.35 to 21.89

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*#Triacontane	16.352	.481	.08	16.71	-

RRO Area:177423.5 RRO AMOUNT: 6.456097E-03