

SAF-RC-233
100-IU-2 & 100-IU-6 Remaining
Waste Sites – Soil In-Process
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt

H4-21

KW 11/19/14
INITIAL/DATE

COMMENTS:

SDG XP0158

SAF-RC-233

Rad only

Chem only

Rad & Chem

Complete

Partial

Sample Location: 600-20, tank cleaning site, pre-ver



November 10, 2014

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354

Re: RC-233 Soil
Work Order: 360600
SDG: XP0158

Dear Joan Kessner:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 05, 2014. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1616.

Sincerely,

Orlette Johnson
Project Manager

Purchase Order: 1510
Chain of Custody: RC-233-073
Enclosures



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Case Narrative

**Receipt Narrative
for
WC-HANFORD, INC.
SDG: XP0158
Work Order: 360600**

November 10, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on November 05, 2014 for analysis.

Sample Identification: The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
360600001	J1V1F3
360600002	J1V1F4
360600003	J1V1F5
360600004	J1V1F6
360600005	J1V1F7
360600006	J1V1F8
360600007	J1V1F9

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Diesel Range Organics.



Orlette Johnson
Project Manager

Chain of Custody and Supporting Documentation

Washington Closure Hanford **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

Collector: STOWE, QG Telephone No.: 375-4688 Project Coordinator: KESSNER, JH Price Code: RC-233-073 Data Turnaround: 7 day

Project Designation: 100-IU-2 & 100-IU-6 Remaining Waste Sites Sampling Location: 600-20, tank cleaning site, pre-ver SAF No.: RC-233 Method of Shipment: Commercial Carrier - Fed Ex

Ice Chest No.: RCC-07-004 Field Logbook No.: EL-1667-02 COA: 0FR221Y000 Bill of Lading/Air Bill No.: See OSPC

Shipped To: GEL Laboratories Charliston Offsite Property No.: A131267

Sample No.	Matrix	Sample Date	Sample Time	Preservation	Cool/AC
J1V1F8	SOIL	11/03/14	1125	aG	
J1V1F9	SOIL	11/03/14	1128	1	
J1V4H0	SOIL	11/3/14		125mL	
J1V4H1	SOIL			TPH-Diesel Range - WTPH-D +	
J1V4H2	SOIL				

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
None

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quiret Stowe	11-3-14 1130	Wmshea DWS/HEA	11/3/14 1130
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Wmshea DWS/HEA	11/3/14 1245	C. Birmingham	11-3-14 1245
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
C. Birmingham	11-3-14 1330	1060 Battelle, fudge	11-3-14 1330
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
1060 Battelle, fudge	11-4-14 0800	C. Birmingham	11-4-14 0800
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
C. Birmingham	11-4-14 0805	Fed Ex	11-4-14 0805
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	11-4-14 0805	P. N. Oakt Patate/C. Dent	11/5/14 0805
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

CHAIN OF POSSESSION

Relinquished By/Removed From: Quiret Stowe Date/Time: 11-3-14 1130 Received By/Stored In: Wmshea DWS/HEA Date/Time: 11/3/14 1130

Relinquished By/Removed From: Wmshea DWS/HEA Date/Time: 11/3/14 1245 Received By/Stored In: C. Birmingham Date/Time: 11-3-14 1245

Relinquished By/Removed From: C. Birmingham Date/Time: 11-3-14 1330 Received By/Stored In: 1060 Battelle, fudge Date/Time: 11-3-14 1330

Relinquished By/Removed From: 1060 Battelle, fudge Date/Time: 11-4-14 0800 Received By/Stored In: C. Birmingham Date/Time: 11-4-14 0800

Relinquished By/Removed From: C. Birmingham Date/Time: 11-4-14 0805 Received By/Stored In: Fed Ex Date/Time: 11-4-14 0805

Relinquished By/Removed From: Fed Ex Date/Time: 11-4-14 0805 Received By/Stored In: P. N. Oakt Patate/C. Dent Date/Time: 11/5/14 0805

Relinquished By/Removed From: P. N. Oakt Patate/C. Dent Date/Time: 11/5/14 0805 Received By/Stored In: Date/Time: Disposed By: Date/Time: Disposal Method: Disposed By: Date/Time: Disposal Method:

SPECIAL INSTRUCTIONS

REVIEWED BY: DSJ via email DATE: 11-4-14

FINAL SAMPLE DISPOSITION

WCH-EE-011 XP0158



SAMPLE RECEIPT & REVIEW FORM

Client: <u>WCHW</u>		SDG/AR/COC/Work Order:	
Received By: <u>P. Dent</u>		Date Received: <u>11/5/14</u>	
Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0/cpm</u>
Classified Radioactive II or III by RSO?		<input checked="" type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?		<input checked="" type="checkbox"/>	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		<input checked="" type="checkbox"/>	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		<input checked="" type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: <u>Ice bags</u> Blue ice Dry ice None Other (describe) <u>2c</u> *all temperatures are recorded in Celsius
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): <u>130462966</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7 Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 Are sample containers identifiable as GEL provided?			<input checked="" type="checkbox"/>	
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
14 Carrier and tracking number.				Circle Applicable: <u>FedEx Air</u> FedEx Ground UPS Field Services Courier Other <u>7717 3265 4713</u>

Comments (Use Continuation Form if needed):

Laboratory Certifications

List of current GEL Certifications as of 10 November 2014

State	Certification
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-12-00283, P330-12-00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122014-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
Plant Material Permit	PDEP-12-00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-14-9
Utah NELAP	SC000122014-16
Vermont	VT87156
Virginia NELAP	460202
Washington	C780-12
Wisconsin	999887790

FID Diesel Range Organics Analysis

Case Narrative

**FID Diesel Range Organics
WC-HANFORD, INC. (WCHN)
SDG XP0158**

Method/Analysis Information

Procedure: Analysis of Diesel Range Organics by Flame Ionization Detector
Analytical Method: NWTPH-Dx in Soil
Prep Method: SW846 3541
Analytical Batch Number: 1433833
Prep Batch Number: 1433830

Sample Analysis

The following samples were analyzed using the analytical protocol as established in NWTPH-Dx in Soil:

Sample ID	Client ID
360600001	J1V1F3
360600002	J1V1F4
360600003	J1V1F5
360600004	J1V1F6
360600005	J1V1F7
360600006	J1V1F8
360600007	J1V1F9
1203203692	MB for batch 1433830
1203203693	Laboratory Control Sample (LCS)
1203203694	360600001(J1V1F3) Matrix Spike (MS)
1203203695	360600001(J1V1F3) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-003 REV# 24.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria. Analyte peaks eluted within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Sample 360600001 (J1V1F3) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS recovery was within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recovery was within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP. Analyte peaks eluted within the established retention time windows for this method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Electronic Package Comment

This package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative.

Data Exception (DER) Documentation

Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for this SDG in this batch.

Manual Integrations

Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

Additional Comments

The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The additional comments were not required.

System Configuration

The Diesel Range Organics analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
FID7.I	Agilent Gas Chromatograph	Agilent 6890N GC/FID	DB-5MS	30m x 0.25mm, 0.25um(J&W)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0158 GEL Work Order: 360600 Project: RC-233 Soil

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

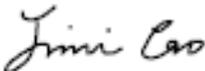
RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Jimin Cao

Date: 11 NOV 2014

Title: Data Validator

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-233 Soil

Client SDG: XP0158

Client Sample ID: J1V1F3 Project: WCHN00313
 Sample ID: 360600001 Client ID: WCHN001
 Matrix: SOIL
 Collect Date: 03-NOV-14 11:00
 Receive Date: 05-NOV-14
 Collector: Client
 Moisture: 3.82%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2250	2250	6920	ug/kg	1	BYT1	11/08/14	1344	1433833	1
Motor Oil (C20-C36)	J	3970	2250	6920	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	AXV1	11/05/14	1705	1433830

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	473 ug/kg	692	68.5	(50%-150%)

Notes:

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 10, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-233 Soil

Client SDG: XP0158

Client Sample ID: J1V1F4
Sample ID: 360600002
Matrix: SOIL
Collect Date: 03-NOV-14 11:03
Receive Date: 05-NOV-14
Collector: Client
Moisture: 3.08%

Project: WCHN00313
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2230	2230	6860	ug/kg	1	BYT1	11/08/14	1659	1433833	1
Motor Oil (C20-C36)	J	2510	2230	6860	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	AXV1	11/05/14	1705	1433830

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	535 ug/kg	686	77.9	(50%-150%)

Notes:

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-233 Soil

Client SDG: XP0158

Client Sample ID: J1V1F5 Project: WCHN00313
 Sample ID: 360600003 Client ID: WCHN001
 Matrix: SOIL
 Collect Date: 03-NOV-14 11:07
 Receive Date: 05-NOV-14
 Collector: Client
 Moisture: 3.06%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2230	2230	6870	ug/kg	1	BYT1	11/08/14	1737	1433833	1
Motor Oil (C20-C36)	J	5400	2230	6870	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	AXV1	11/05/14	1705	1433830

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	496 ug/kg	687	72.2	(50%-150%)

Notes:

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 10, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354

Contact: Joan Kessner
Project: RC-233 Soil

Client SDG: XP0158

Client Sample ID: J1V1F7
Sample ID: 360600005
Matrix: SOIL
Collect Date: 03-NOV-14 11:13
Receive Date: 05-NOV-14
Collector: Client
Moisture: 2.44%

Project: WCHN00313
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)		31600	2220	6820	ug/kg	1	BYT1	11/08/14	1855	1433833	1
Motor Oil (C20-C36)		25800	2220	6820	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	AXV1	11/05/14	1705	1433830

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	521 ug/kg	682	76.4	(50%-150%)

Notes:

Quality Control Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: November 10, 2014

Page 1 of 2

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington

Contact: Joan Kessner

Workorder: 360600

Client SDG: XP0158

Project Description: RC-233 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Diesel Range Organics											
Batch	1433833										
QC1203203693	LCS										
Diesel Range Organics (C10-C20)	66600			49000	ug/kg		73.7	(70%-130%)	BYT1	11/08/14	13:05
Motor Oil (C20-C36)	66600			56700	ug/kg		85.2	(70%-130%)			
**o-Terphenyl	666			499	ug/kg		75	(50%-150%)			
QC1203203692	MB										
Diesel Range Organics (C10-C20)			U	2170	ug/kg					11/08/14	12:26
Motor Oil (C20-C36)			U	2170	ug/kg						
**o-Terphenyl	666			477	ug/kg		71.5	(50%-150%)			
QC1203203694	360600001 MS										
Diesel Range Organics (C10-C20)	69200	U	2250	50400	ug/kg		72.8	(70%-130%)		11/08/14	14:23
Motor Oil (C20-C36)	69200	J	3970	61400	ug/kg		82.9	(70%-130%)			
**o-Terphenyl	692		473	508	ug/kg		73.4	(50%-150%)			
QC1203203695	360600001 MSD										
Diesel Range Organics (C10-C20)	69200	U	2250	52600	ug/kg	4.18	76	(0%-20%)		11/08/14	15:02
Motor Oil (C20-C36)	69200	J	3970	65200	ug/kg	5.99	88.4	(0%-20%)			
**o-Terphenyl	692		473	536	ug/kg		77.4	(50%-150%)			

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). Value is estimated

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 360600

Client SDG: XP0158

Project Description: RC-233 Soil

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
P	Aroclor target analyte with greater than 25% difference between column analyses.										
T	Spike and/or spike duplicate sample recovery is outside control limits.										
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
o	Analyte failed to recover within LCS limits (Organics only)										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

Prep Logbook

Extraction of Semivolatile and Nonvolatile Organic Compounds from Soil, Sludge, and Other Miscellaneous Solid Samples

Batch ID: 1433830 **Verified by:** _____
Analyst: Alberto Velasco
Method: SW846 3541

Lab SOP: GL-OA-E-010 REV# 22
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1203203692 MB	05-NOV-2014 17:05:00	30.02	1	0.03331
1203203693 LCS	05-NOV-2014 17:05:00	30.04	1	0.03329
360600001	05-NOV-2014 17:05:00	30.07	1	0.03326
1203203694 MS (360600001)	05-NOV-2014 17:05:00	30.03	1	0.0333
1203203695 MSD (360600001)	05-NOV-2014 17:05:00	30.04	1	0.03329
360600002	05-NOV-2014 17:05:00	30.07	1	0.03326
360600003	05-NOV-2014 17:05:00	30.03	1	0.0333
360600004	05-NOV-2014 17:05:00	30.05	1	0.03328
360600005	05-NOV-2014 17:05:00	30.07	1	0.03326
360600006	05-NOV-2014 17:05:00	30.06	1	0.03327
360600007	05-NOV-2014 17:05:00	30.02	1	0.03331

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1203203693	AZDRO SPIKE LCS STD,4000ug/ml	WFI141030-62	1	mL	Final Solvent: CH2Cl2 Verified By: SLW
MS	1203203694	AZDRO SPIKE LCS STD,4000ug/ml	WFI141030-62	1	mL	
MSD	1203203695	AZDRO SPIKE LCS STD,4000ug/ml	WFI141030-62	1	mL	
SURR	All	20 ppm surrogate	WE141001-04	1	mL	
REGNT	All	Methylene Chloride	2172960-D	120	mL	
SOURC	All	SODIUM SULFATE	2168618	30	g	