

SAF-RC-074
100-D/DR Burial Grounds & Remaining
Sites – Soil In-Process
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt

H4-21

KW 10/9/14
INITIAL/DATE

COMMENTS:

SDG XP0135

SAF RC-074

Rad only

Chem only

Rad & Chem

Complete

Partial

**Waste Site: 100-D-75:1, 151-D, Primary Electrical
substation**



September 24, 2014

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

Re: RC-074 Soil
Work Order: 357108
SDG: XP0135

Dear Joan Kessner:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on September 19, 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-074-677 and RC-074-678
Enclosures



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Case Narrative

**Receipt Narrative
for
WC-HANFORD, INC.
SDG: XP0135
Work Order: 357108**

September 24, 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 September 19, 2014 for analysis.

Sample Identification: The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
357108001	J1V091
357108002	J1V092
357108003	J1V093
357108004	J1V094
357108005	J1V095
357108006	J1V096
357108007	J1V097
357108008	J1V098
357108009	J1V099
357108010	J1V0C0

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 and GC Semivolatile PCB.



Orlette Johnson
Project Manager

Chain of Custody and Supporting Documentation

Washington Closure Hanford
 Collector
 Project Designation
 100-D/DR Field Remediation
 Ice Chest No.
 WCH-12-029
 Shipped To
GEL Laboratories Charleston
 Other Labs Shipped To
 N/A

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 Company Contact
 Joan Kessner
 Telephone No.
 375-4688
 Project Coordinator
 KESSNER, JH
 Price Code
 8A
 SAF No.
 RC-074
 Method of Shipment
 Commercial Carrier / FED Ex
 Bill of Lading/Air Bill No.
 See OSLC

Sampling Location
 100-D-75.1, 151-D, primary electrical substation
 Field Logbook No.
 EL-1662-03
 COA
 01D7512600
 Offsite Property No.
 A131230

Company Contact
 Telephone No.
 Project Coordinator
 Price Code
 SAF No.
 Method of Shipment
 Commercial Carrier
 Bill of Lading/Air Bill No.

Sample No.	Matrix	Sample Date	Sample Time	Preservation	Cool 4C	Cool 4C	TPH-Diesel Range - WTPHD +
J1V091	SOIL	09/17/14	1235	Cool 4C		X	
J1V092	SOIL	09/17/14	1238	aG		X	
J1V093	SOIL	09/17/14	1244			X	
J1V094	SOIL	09/17/14	1247			X	
J1V095	SOIL	09/17/14	1252			X	

POSSIBLE SAMPLE HAZARDS/REMARKS
 None

Special Handling and/or Storage
 Cool 4C

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Heather Weber	09/17/14 1325	TRANSFERS/CONTAINER	09/17/14
TRANSFERS/CONTAINER	1545	SM Sexton	9/17/14
SM Sexton	9/17/14 1550	10100 Battelle Fridge 1A	9/17/14
10100 Battelle Fridge 1A	8735	SM Sexton	9/18/14
SM Sexton	9/18/14 0740	FED EX	
FED EX	9/18/14	P. Ward	9/18/14 0900
P. Ward	9/18/14		

FINAL SAMPLE DISPOSITION
 Disposal Method
 Disposed By
 Date/Time



XP0135

ACTIVE

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-074-678	Page 1 of 1
Collector <i>A. Weber</i>	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code	Data Turnaround
Project Designation 100-D/DR Field Remediation	Sampling Location 100-D-75-1, 151-D, primary electrical substation	Field Logbook No. EL-1662-03	SAF No. RC-074	8A	3 days
Ice Chest No. WCH-12-029	COA 01D7512600	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. <i>see OSLC</i>		
Shipped To GEL Laboratories Charleston	Offsite Property No. A131230				

Sample No.	Matrix	Sample Date	Sample Time	Preservation	Cool 4C	Cool 4C
J1V096	SOIL	09/17/14	1255	Cool 4C		
J1V097	SOIL	09/17/14	1300	ag		
J1V098	SOIL	09/17/14	1318	1		
J1V099	SOIL	09/17/14	1321	125mL		
J1V0C0	SOIL	09/17/14	1314	TPH-Diesel Range - WTPHD +		

POSSIBLE SAMPLE HAZARDS/REMARKS
none

Special Handling and/or Storage
Cool 4C

Sample No.	Matrix	Sample Date	Sample Time	Sign/Print Names	Date/Time
J1V096	SOIL	09/17/14	1255	<i>[Signature]</i>	1325
J1V097	SOIL	09/17/14	1300	<i>[Signature]</i>	1545
J1V098	SOIL	09/17/14	1318	<i>[Signature]</i>	1550
J1V099	SOIL	09/17/14	1321	<i>[Signature]</i>	0735
J1V0C0	SOIL	09/17/14	1314	<i>[Signature]</i>	0740

CHAIN OF POSSESSION		SPECIAL INSTRUCTIONS	
Relinquished By/Removed From <i>[Signature]</i>	Date/Time 09/17/14 1325	Received By/Stored In <i>[Signature]</i>	Date/Time 09/17/14 1325
Relinquished By/Removed From <i>[Signature]</i>	Date/Time 09/17/14 1545	Received By/Stored In <i>[Signature]</i>	Date/Time 09/17/14 1545
Relinquished By/Removed From <i>[Signature]</i>	Date/Time 09/17/14 1550	Received By/Stored In <i>[Signature]</i>	Date/Time 09/17/14 1550
Relinquished By/Removed From <i>[Signature]</i>	Date/Time 09/17/14 0735	Received By/Stored In <i>[Signature]</i>	Date/Time 09/17/14 0735
Relinquished By/Removed From <i>[Signature]</i>	Date/Time 09/18/14 0740	Received By/Stored In <i>[Signature]</i>	Date/Time 09/18/14 0740
Relinquished By/Removed From <i>[Signature]</i>	Date/Time 09/18/14	Received By/Stored In <i>[Signature]</i>	Date/Time 09/18/14
Relinquished By/Removed From <i>[Signature]</i>	Date/Time 09/18/14	Received By/Stored In <i>[Signature]</i>	Date/Time 09/18/14



XP0135

SAMPLE RECEIPT & REVIEW FORM

Client: <u>WCHN</u>		SDG/AR/COC/Work Order: <u>357108</u>
Received By: <u>P. N. Dent</u>		Date Received: <u>9/19/14</u>
Suspected Hazard Information	Yes	No
COC/Samples marked as radioactive?		<input checked="" type="checkbox"/>
Classified Radioactive II or III by RSO?		<input checked="" type="checkbox"/>
COC/Samples marked containing PCBs?		<input checked="" type="checkbox"/>
Package, COC, and/or Samples marked as beryllium or asbestos containing?		<input checked="" type="checkbox"/>
Shipped as a DOT Hazardous?		<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?		<input checked="" type="checkbox"/>

*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.

Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0/cpm

If yes, Were swipes taken of sample containers < action levels?

If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.

Hazard Class Shipped: UN#:

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: Ice bags <u>Blue ice</u> Dry ice None Other (describe) *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: FedEx Air FedEx Ground UPS Field Services Courier Other <u>7712 0186 4110</u> <u>7712 0186 4680</u>

Comments (Use Continuation Form if needed):

Laboratory Certifications

List of current GEL Certifications as of 24 September 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	SC000122014-14
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 XP0135**

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: 1420696

Prep Batch Number: 1420695

Sample Analysis

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

Sample ID	Client ID
357108001	J1V091
357108002	J1V092
357108003	J1V093
357108004	J1V094
357108005	J1V095
357108006	J1V096
357108007	J1V097
357108008	J1V098
357108009	J1V099
357108010	J1V0C0
1203171253	MB for batch 1420695
1203171254	Laboratory Control Sample (LCS)
1203171257	357108001(J1V091) Matrix Spike (MS)
1203171258	357108001(J1V091) 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 357108001 (J1V091) 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: XP0135 GEL Work Order: 357108 Project: RC-074 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.

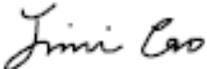
RA Indicates that sample is re-analyzed without re-extraction.

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: 03 OCT 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: September 24, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V091	Project: WCHN00716
Sample ID: 357108001	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 12:35	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: 3.65%	

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)	J	2390	2240	6910	ug/kg	1	BYT1	09/24/14	0007	1420696	1
Motor Oil (C20-C36)	J	6380	2240	6910	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

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"	513 ug/kg	691	74.3	(50%-150%)

Notes:

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: September 24, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V092
Sample ID: 357108002
Matrix: Soil
Collect Date: 17-SEP-14 12:38
Receive Date: 19-SEP-14
Collector: Client
Moisture: 4.84%

Project: WCHN00716
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	2270	2270	6990	ug/kg	1	BYT1	09/24/14	0203	1420696	1
Motor Oil (C20-C36)	J	4580	2270	6990	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

The following Analytical Methods were performed:

Method	Description	Analyst	Result	Nominal	Recovery%	Acceptable Limits
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"		537 ug/kg	699	76.8	(50%-150%)

Notes:

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: September 24, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V093 Project: WCHN00716
 Sample ID: 357108003 Client ID: WCHN001
 Matrix: Soil
 Collect Date: 17-SEP-14 12:44
 Receive Date: 19-SEP-14
 Collector: Client
 Moisture: .941%

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	2180	2180	6720	ug/kg	1	BYT1	09/24/14	0241	1420696	1
Motor Oil (C20-C36)	J	5750	2180	6720	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

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"	484 ug/kg	672	71.9	(50%-150%)

Notes:

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: September 24, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V094	Project: WCHN00716
Sample ID: 357108004	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 12:47	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: .979%	

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)	J	3650	2190	6730	ug/kg	1	BYT1	09/24/14	0320	1420696	1
Motor Oil (C20-C36)		9600	2190	6730	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

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"	523 ug/kg	673	77.7	(50%-150%)

Notes:

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: September 24, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V095	Project: WCHN00716
Sample ID: 357108005	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 12:52	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: .785%	

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)		29800	2180	6700	ug/kg	1	BYT1	09/24/14	0359	1420696	1
Motor Oil (C20-C36)		32700	2180	6700	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

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"	557 ug/kg	670	83.2	(50%-150%)

Notes:

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: September 24, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V096 Project: WCHN00716
 Sample ID: 357108006 Client ID: WCHN001
 Matrix: Soil
 Collect Date: 17-SEP-14 12:55
 Receive Date: 19-SEP-14
 Collector: Client
 Moisture: .744%

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)	J	3550	2180	6710	ug/kg	1	BYT1	09/24/14	0437	1420696	1
Motor Oil (C20-C36)		8510	2180	6710	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

The following Analytical Methods were performed:

Method	Description	Analyst	Result	Nominal	Recovery%	Acceptable Limits
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"		479 ug/kg	671	71.4	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: September 24, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V097
Sample ID: 357108007
Matrix: Soil
Collect Date: 17-SEP-14 13:00
Receive Date: 19-SEP-14
Collector: Client
Moisture: .867%

Project: WCHN00716
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)	J	2840	2180	6710	ug/kg	1	BYT1	09/24/14	0632	1420696	1
Motor Oil (C20-C36)		8800	2180	6710	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

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"	488 ug/kg	671	72.7	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: September 24, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V098 Project: WCHN00716
 Sample ID: 357108008 Client ID: WCHN001
 Matrix: Soil
 Collect Date: 17-SEP-14 13:18
 Receive Date: 19-SEP-14
 Collector: Client
 Moisture: 1.6%

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	2200	2200	6770	ug/kg	1	BYT1	09/24/14	0711	1420696	1
Motor Oil (C20-C36)	J	4430	2200	6770	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

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"	466 ug/kg	677	68.9	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: September 24, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V099 Project: WCHN00716
 Sample ID: 357108009 Client ID: WCHN001
 Matrix: Soil
 Collect Date: 17-SEP-14 13:21
 Receive Date: 19-SEP-14
 Collector: Client
 Moisture: 1.45%

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	2190	2190	6750	ug/kg	1	BYT1	09/24/14	0749	1420696	1
Motor Oil (C20-C36)	J	4870	2190	6750	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

The following Analytical Methods were performed:

Method	Description	Analyst	Result	Nominal	Recovery%	Acceptable Limits
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"		460 ug/kg	675	68.2	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: September 24, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V0C0	Project: WCHN00716
Sample ID: 357108010	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 13:14	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: .492%	

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	2180	2180	6690	ug/kg	1	BYT1	09/24/14	0828	1420696	1
Motor Oil (C20-C36)	J	5190	2180	6690	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	09/22/14	1748	1420695

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"	557 ug/kg	669	83.2	(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: September 24, 2014

Page 1 of 2

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

Workorder: 357108

Client SDG: XP0135

Project Description: RC-074 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Diesel Range Organics											
Batch	1420696										
QC1203171254	LCS										
Diesel Range Organics (C10-C20)	66600			52100	ug/kg		78.2	(70%-130%)	BYT1	09/23/14	23:29
Motor Oil (C20-C36)	66600			55500	ug/kg		83.3	(70%-130%)			
**o-Terphenyl	666			548	ug/kg		82.3	(50%-150%)			
QC1203171253	MB										
Diesel Range Organics (C10-C20)			U	2160	ug/kg					09/23/14	22:50
Motor Oil (C20-C36)			U	2160	ug/kg						
**o-Terphenyl	666			466	ug/kg		70	(50%-150%)			
QC1203171257	357108001 MS										
Diesel Range Organics (C10-C20)	69100	J	2390	54400	ug/kg		75.2	(70%-130%)		09/24/14	00:46
Motor Oil (C20-C36)	69100	J	6380	62400	ug/kg		81.1	(70%-130%)			
**o-Terphenyl	691		513	581	ug/kg		84.1	(50%-150%)			
QC1203171258	357108001 MSD										
Diesel Range Organics (C10-C20)	69100	J	2390	57900	ug/kg	6.30	80.3	(0%-20%)		09/24/14	01:24
Motor Oil (C20-C36)	69100	J	6380	62500	ug/kg	0.170	81.2	(0%-20%)			
**o-Terphenyl	691		513	586	ug/kg		84.7	(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

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QC Summary

Workorder: 357108

Client SDG: XP0135

Project Description: RC-074 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: 1420695 Verified by: _____
 Analyst: Shannon Whitehead
 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)
1203171253 MB	22-SEP-2014 17:48:00	30.03	1	0.0333
1203171254 LCS	22-SEP-2014 17:48:00	30.03	1	0.0333
357108001	22-SEP-2014 17:48:00	30.06	1	0.03327
1203171257 MS (357108001)	22-SEP-2014 17:48:00	30.04	1	0.03329
1203171258 MSD (357108001)	22-SEP-2014 17:48:00	30.02	1	0.03331
357108002	22-SEP-2014 17:48:00	30.08	1	0.03324
357108003	22-SEP-2014 17:48:00	30.04	1	0.03329
357108004	22-SEP-2014 17:48:00	30.01	1	0.03332
357108005	22-SEP-2014 17:48:00	30.07	1	0.03326
357108006	22-SEP-2014 17:48:00	30.03	1	0.0333
357108007	22-SEP-2014 17:48:00	30.08	1	0.03324
357108008	22-SEP-2014 17:48:00	30.02	1	0.03331
357108009	22-SEP-2014 17:48:00	30.05	1	0.03328
357108010	22-SEP-2014 17:48:00	30.03	1	0.0333
357115001	22-SEP-2014 17:48:00	30.08	1	0.03324
1203171255 MS (357115001)	22-SEP-2014 17:48:00	30.05	1	0.03328
1203171256 MSD (357115001)	22-SEP-2014 17:48:00	30	1	0.03333
357115003	22-SEP-2014 17:48:00	30.02	1	0.03331

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1203171254	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-63	1	mL	Verified By: AV Final Solvent: CH2Cl2
MS	1203171255	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-63	1	mL	
MS	1203171257	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-63	1	mL	
MSD	1203171256	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-63	1	mL	
MSD	1203171258	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-63	1	mL	
SURR	All	20 ppm surrogate	WE140819-04	1	mL	
REGNT	All	Methylene Chloride	2156262-D	120	mL	
SOURC	All	SODIUM SULFATE	2148821	30	g	

PCB Analysis

Case Narrative

**PCB Case Narrative
WC-HANFORD, INC. (WCHN)
SDG XP0135**

Method/Analysis Information

Procedure: Analysis of Polychlorinated Biphenyls by ECD
Analytical Method: SW846 3541/8082A
Prep Method: SW846 3541
Analytical Batch Number: 1420834
Prep Batch Number: 1420833

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8082A:

Sample ID	Client ID
357108001	J1V091
357108002	J1V092
357108003	J1V093
357108004	J1V094
357108005	J1V095
357108006	J1V096
357108007	J1V097
357108008	J1V098
357108009	J1V099
357108010	J1V0C0
1203171637	MB for batch 1420833
1203171638	Laboratory Control Sample (LCS)
1203171641	357108003(J1V093) Matrix Spike (MS)
1203171642	357108003(J1V093) 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-040 REV# 20.

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

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration

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

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standards (ICV or CCV) met the acceptance criteria. All analytes were 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 the samples in this SDG in this batch.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Sample 357108003 (J1V093) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS recoveries for this SDG were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recoveries for this SDG were 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. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns. All sample extracts were cleaned using alumina.

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 in this batch.

Miscellaneous Information

Electronic Package Comment

The following 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 that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

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 the samples in 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 PCB 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 following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS. The data reported for the MS and MSD are from the same analytical column as the parent sample.

Due to software issue, the surrogate recovery range was not indicated or possibly indicated incorrectly in Quantitation Report. Please see Surrogate Recovery Report for correct surrogate acceptance limits.

Due to rounding differences in the calculation between the forms, the data reported in Sample Summary (form 1) and Spike Recovery Report (form 3) may differ slightly from the data reported in Identification Summary (form 10).

Aroclors quantitated on the raw data report by ChemStation data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report.

System Configuration

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD9A.I_1	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 1	30m x 0.25mm, 0.25um

ECD9A.I_2	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 2	30m x 0.25mm, 0.20um
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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.

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Qualifier Definition Report for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0135 GEL Work Order: 357108 Project: RC-074 Soil

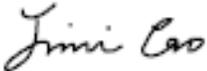
The Qualifiers in this report are defined as follows:

- 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
- P Aroclor target analyte with greater than 25% difference between column analyses.
- 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: 24 SEP 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: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V091 Project: WCHN00716
 Sample ID: 357108001 Client ID: WCHN001
 Matrix: Soil
 Collect Date: 17-SEP-14 12:35
 Receive Date: 19-SEP-14
 Collector: Client
 Moisture: 3.65%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.15	1.15	3.46	ug/kg	1	YS1	09/23/14	1046	1420834	1
Aroclor-1221	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1232	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1242	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1248	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1262	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1268	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1254		39.2	1.15	3.46	ug/kg	1	YS1	09/23/14	1046	1420834	2
Aroclor-1260		16.3	1.15	3.46	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.79 ug/kg	6.91	83.8	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	7.15 ug/kg	6.91	104	(25%-131%)

Notes:

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V092	Project: WCHN00716
Sample ID: 357108002	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 12:38	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: 4.84%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.16	1.16	3.50	ug/kg	1	YS1	09/23/14	1100	1420834	1
Aroclor-1221	U	1.16	1.16	3.50	ug/kg	1					
Aroclor-1232	U	1.16	1.16	3.50	ug/kg	1					
Aroclor-1242	U	1.16	1.16	3.50	ug/kg	1					
Aroclor-1248	U	1.16	1.16	3.50	ug/kg	1					
Aroclor-1262	U	1.16	1.16	3.50	ug/kg	1					
Aroclor-1268	U	1.16	1.16	3.50	ug/kg	1					
Aroclor-1254	P	9.94	1.16	3.50	ug/kg	1	YS1	09/23/14	1100	1420834	2
Aroclor-1260		16.1	1.16	3.50	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.54 ug/kg	7.00	79.2	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.69 ug/kg	7.00	95.7	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V093	Project: WCHN00716
Sample ID: 357108003	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 12:44	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: .941%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.12	1.12	3.36	ug/kg	1	YS1	09/23/14	1112	1420834	1
Aroclor-1221	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1232	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1242	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1248	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1254	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1260	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1262	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1268	U	1.12	1.12	3.36	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.42 ug/kg	6.72	80.7	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.51 ug/kg	6.72	96.9	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V094	Project: WCHN00716
Sample ID: 357108004	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 12:47	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: .979%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.12	1.12	3.36	ug/kg	1	YS1	09/23/14	1206	1420834	1
Aroclor-1221	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1232	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1242	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1248	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1262	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1268	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1254		4.12	1.12	3.36	ug/kg	1	YS1	09/23/14	1206	1420834	2
Aroclor-1260		12.4	1.12	3.36	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.29 ug/kg	6.73	78.7	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.60 ug/kg	6.73	98.2	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V095	Project: WCHN00716
Sample ID: 357108005	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 12:52	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: .785%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.12	1.12	3.36	ug/kg	1	YS1	09/23/14	1219	1420834	1
Aroclor-1221	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1232	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1242	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1248	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1254	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1262	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1268	U	1.12	1.12	3.36	ug/kg	1					
Aroclor-1260		33.4	1.12	3.36	ug/kg	1	YS1	09/23/14	1219	1420834	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	4.47 ug/kg	6.71	66.6	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.78 ug/kg	6.71	86.2	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V096	Project: WCHN00716
Sample ID: 357108006	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 12:55	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: .744%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.12	1.12	3.35	ug/kg	1	YS1	09/23/14	1255	1420834	1
Aroclor-1221	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1232	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1242	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1248	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1262	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1268	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1254	J	3.26	1.12	3.35	ug/kg	1	YS1	09/23/14	1255	1420834	2
Aroclor-1260		7.36	1.12	3.35	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.35 ug/kg	6.71	79.7	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.63 ug/kg	6.71	98.8	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V097	Project: WCHN00716
Sample ID: 357108007	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 13:00	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: .867%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.12	1.12	3.35	ug/kg	1	YS1	09/23/14	1309	1420834	1
Aroclor-1221	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1232	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1242	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1248	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1262	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1268	U	1.12	1.12	3.35	ug/kg	1					
Aroclor-1254		12.3	1.12	3.35	ug/kg	1	YS1	09/23/14	1309	1420834	2
Aroclor-1260		21.7	1.12	3.35	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	4.66 ug/kg	6.70	69.5	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.61 ug/kg	6.70	98.6	(25%-131%)

Notes:

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V098	Project: WCHN00716
Sample ID: 357108008	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 13:18	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: 1.6%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.12	1.12	3.38	ug/kg	1	YS1	09/23/14	1322	1420834	1
Aroclor-1221	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1232	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1242	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1248	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1254	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1260	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1262	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1268	U	1.12	1.12	3.38	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.29 ug/kg	6.75	78.3	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.44 ug/kg	6.75	95.3	(25%-131%)

Notes:

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V099	Project: WCHN00716
Sample ID: 357108009	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 13:21	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: 1.45%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.12	1.12	3.37	ug/kg	1	YS1	09/23/14	1335	1420834	1
Aroclor-1221	U	1.12	1.12	3.37	ug/kg	1					
Aroclor-1232	U	1.12	1.12	3.37	ug/kg	1					
Aroclor-1242	U	1.12	1.12	3.37	ug/kg	1					
Aroclor-1248	U	1.12	1.12	3.37	ug/kg	1					
Aroclor-1254	U	1.12	1.12	3.37	ug/kg	1					
Aroclor-1262	U	1.12	1.12	3.37	ug/kg	1					
Aroclor-1268	U	1.12	1.12	3.37	ug/kg	1					
Aroclor-1260	J	1.80	1.12	3.37	ug/kg	1	YS1	09/23/14	1335	1420834	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	4.93 ug/kg	6.75	73.1	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.97 ug/kg	6.75	88.5	(25%-131%)

Notes:

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: September 23, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0135

Client Sample ID: J1V0C0	Project: WCHN00716
Sample ID: 357108010	Client ID: WCHN001
Matrix: Soil	
Collect Date: 17-SEP-14 13:14	
Receive Date: 19-SEP-14	
Collector: Client	
Moisture: .492%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.11	1.11	3.35	ug/kg	1	YS1	09/23/14	1349	1420834	1
Aroclor-1221	U	1.11	1.11	3.35	ug/kg	1					
Aroclor-1232	U	1.11	1.11	3.35	ug/kg	1					
Aroclor-1242	U	1.11	1.11	3.35	ug/kg	1					
Aroclor-1248	U	1.11	1.11	3.35	ug/kg	1					
Aroclor-1262	U	1.11	1.11	3.35	ug/kg	1					
Aroclor-1268	U	1.11	1.11	3.35	ug/kg	1					
Aroclor-1254	J	1.81	1.11	3.35	ug/kg	1	YS1	09/23/14	1349	1420834	2
Aroclor-1260	J	2.43	1.11	3.35	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	09/22/14	1025	1420833

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.34 ug/kg	6.69	79.8	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.72 ug/kg	6.69	100	(25%-131%)

Notes:

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: September 23, 2014

Page 1 of 2

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

Workorder: 357108

Client SDG: XP0135

Project Description: RC-074 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	1420834										
QC1203171638	LCS										
Aroclor-1016	33.3			26.9	ug/kg		80.9	(44%-97%)	YS1	09/23/14	10:35
Aroclor-1260	33.3			26.7	ug/kg		80.3	(49%-109%)			
**4cmx	6.66			5.42	ug/kg		81.4	(29%-106%)			
**Decachlorobiphenyl	6.66			6.43	ug/kg		96.6	(25%-131%)			
QC1203171637	MB										
Aroclor-1016			U	1.11	ug/kg					09/23/14	10:24
Aroclor-1221			U	1.11	ug/kg						
Aroclor-1232			U	1.11	ug/kg						
Aroclor-1242			U	1.11	ug/kg						
Aroclor-1248			U	1.11	ug/kg						
Aroclor-1254			U	1.11	ug/kg						
Aroclor-1260			U	1.11	ug/kg						
Aroclor-1262			U	1.11	ug/kg						
Aroclor-1268			U	1.11	ug/kg						
**4cmx	6.66			5.30	ug/kg		79.6	(29%-106%)			
**Decachlorobiphenyl	6.66			6.17	ug/kg		92.7	(25%-131%)			
QC1203171641	357108003	MS									
Aroclor-1016	33.5	U	1.12	24.2	ug/kg		72	(22%-127%)		09/23/14	11:39
Aroclor-1260	33.5	U	1.12	25.4	ug/kg		75.8	(18%-130%)			
**4cmx	6.71		5.42	5.60	ug/kg		83.4	(29%-106%)			
**Decachlorobiphenyl	6.71		6.51	7.04	ug/kg		105	(25%-131%)			

GEL LABORATORIES LLC

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QC Summary

Workorder: 357108

Client SDG: XP0135

Project Description: RC-074 Soil

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	1420834										
QC1203171642 357108003 MSD											
Aroclor-1016	33.6	U	1.12	23.3	ug/kg	3.54	69.4	(0%-30%)	YS1	09/23/14	11:52
Aroclor-1260	33.6	U	1.12	24.3	ug/kg	4.38	72.4	(0%-30%)			
**4cmx	6.72			5.42	5.25	ug/kg	78.2	(29%-106%)			
**Decachlorobiphenyl	6.72			6.51	6.52	ug/kg	97.1	(25%-131%)			

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
- 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

Automated Soxhlet Extraction

Batch ID: 1420833 Verified by: _____
 Analyst: Mia DeLee
 Method: SW846 3541

Lab SOP: GL-OA-E-066 REV# 5
 Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Clean Up 1 Amount 1 (mL)	Clean Up Post Clean Up Amount 1 (mL)	Final Volume (mL)	Prepped Factor (mL/g)
1203171637 MB	22-SEP-2014 10:25:00	30.03	H2SO4/KM 2 nO4	9	1	0.0333
1203171638 LCS	22-SEP-2014 10:25:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
357108001	22-SEP-2014 10:25:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
357108002	22-SEP-2014 10:25:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
357108003	22-SEP-2014 10:25:00	30.05	H2SO4/KM 2 nO4	9	1	0.03328
1203171641 MS (357108003)	22-SEP-2014 10:25:00	30.1	H2SO4/KM 2 nO4	9	1	0.03322
1203171642 MSD (357108003)	22-SEP-2014 10:25:00	30.06	H2SO4/KM 2 nO4	9	1	0.03327
357108004	22-SEP-2014 10:25:00	30.02	H2SO4/KM 2 nO4	9	1	0.03331
357108005	22-SEP-2014 10:25:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
357108006	22-SEP-2014 10:25:00	30.03	H2SO4/KM 2 nO4	9	1	0.0333
357108007	22-SEP-2014 10:25:00	30.09	H2SO4/KM 2 nO4	9	1	0.03323
357108008	22-SEP-2014 10:25:00	30.11	H2SO4/KM 2 nO4	9	1	0.03321
357108009	22-SEP-2014 10:25:00	30.07	H2SO4/KM 2 nO4	9	1	0.03326
357108010	22-SEP-2014 10:25:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
357115001	22-SEP-2014 10:25:00	30.05	H2SO4/KM 2 nO4	9	1	0.03328
1203171639 MS (357115001)	22-SEP-2014 10:25:00	30.13	H2SO4/KM 2 nO4	9	1	0.03319
1203171640 MSD (357115001)	22-SEP-2014 10:25:00	30.07	H2SO4/KM 2 nO4	9	1	0.03326
357115003	22-SEP-2014 10:25:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1203171638	PCB Laboratory Control	WE140908-06	1	mL	Final Solvent: Hexane
MS	1203171639	PCB Laboratory Control	WE140908-06	1	mL	Verified by: SJW
MS	1203171641	PCB Laboratory Control	WE140908-06	1	mL	Clean-up Initials: MD
MSD	1203171640	PCB Laboratory Control	WE140908-06	1	mL	Clean-up SOP: GL-OA-E-037 REV.1
MSD	1203171642	PCB Laboratory Control	WE140908-06	1	mL	Clean-up date: 09/22/2014
SURR	All	PEST LOW LEVEL SURROGATE 200 UG/L	WE140812-01	1	mL	Prior to Clean-up: 2mL

Prep Logbook

Batch ID: 1420833
Analyst: Mia DeLee
Method: SW846 3541

Verified by: _____

Lab SOP: GL-OA-E-066 REV# 5
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Clean Up 1 Amount 1 (mL)	Clean Up Amount 1 (mL)	Post Clean Up Amount 1 (mL)	Final Volume (mL)	Prepped Factor (mL/g)
REGNT All	5% Potassium Permanganate		2134734		5	mL	
REGNT All	1:1 sulfuric acid		2144769		5	mL	
REGNT All	Hexane		2151969-B10		120	mL	
SOURC All	SODIUM SULFATE		2148821		30	g	