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 8/21/14
INITIAL/DATE

COMMENTS:

SDG XP0115 SAF-RC-233

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

Sample Location: 100-B-35, Electrical switch yard, In-process

GEL Laboratories LLC

a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407

P 843.556.8171 F 843.766.1178

www.gel.com

August 07, 2014

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

Re: RC-233 Soil
Work Order: 354073
SDG: XP0115

Dear Joan Kessner:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 06, 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-233-046
Enclosures

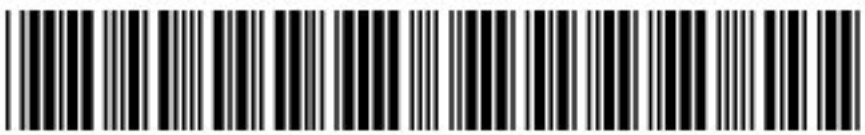

Table of Contents

Case Narrative

Receipt Narrative
for
WC-HANFORD, INC.
SDG: XP0115
Work Order: 354073

August 07, 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 August 06, 2014 for analysis.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
354073001	J1TXD8
354073002	J1TXD9
354073003	J1TXF0

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: GC Semivolatile PCB.

Orlette Johnson
Project Manager

Chain of Custody and Supporting Documentation

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-233-046

Collector W. Sexsmith	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Price Code 1 DAY TURN	**Data Turnaround** 8-5-14 ~~3 days~~ ASAP		
Project Designation 100-IU-2 & 100-IU-6 Remaining Waste Sites	**Sampling Location** 100-B-35, Electrical switch yard, In-process		**SAF No.** RC-233
Ice Chest No. WCH-12-020	**Field Logbook No.** EL-1667-02	**COA** 010B352600	**Method of Shipment** Commerical Carrier / Fed Ex
Shipped To GEL Laboratories Charlston	**Offsite Property No.** A131213		**Bill of Lading/Air Bill No.** See OSRC

Other Labs Shipped To

N/A

354073

POSSIBLE SAMPLE HAZARDS/REMARKS

none

Special Handling and/or Storage

cool 4C

Preservation	Cool 4C										
Type of Container	aG										
No. of Container(s)	1										
Volume	125mL										
Sample Analysis	PCBs - 8082										

Sample No.	Matrix	Sample Date (RC 8-5-14)	Sample Time								
J1TXD8	SOIL	08/05/14	0820	X							
J1TXD9	SOIL	08/05/14	0830	X							
J1TXF0	SOIL	08/05/14	0840	X							
J1TXF1	SOIL	08/05/14									
J1TXF2	SOIL										

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Whitney T. Sexsmith	8/5/14 0850	R. Fahlberg	8.5.14 0850
R. Fahlberg	8-5-14 1100	C. Birkham WCH	8-5-14 1100
C. Birkham WCH	8-5-14 1105	Fed EX	
FED X		P. Valentin Patterson Dent	8/6/14 0855

FINAL SAMPLE DISPOSITION

Disposal Method | Disposed By | Date/Time

SPECIAL INSTRUCTIONS

REVIEWED BY BAS DATE 08/05/14

XP0115

WCH-EE-011

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: WCHN	**SDG/AR/COC/Work Order:** 354073
Received By: P. Quent	**Date Received:** 8/6/14

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?		X	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM
Classified Radioactive II or III by RSO?		X	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		X	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		X	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		X	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	X			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) 2c *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	X			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 130462966
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?	X			Sample ID's and containers affected:
7	Are Encore containers present?				(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	X			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
11	Number of containers received match number indicated on COC?				Sample ID's affected:
12	Are sample containers identifiable as GEL provided?				
13	COC form is properly signed in relinquished/received sections?				
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 7707 6709 1444 7707 6786 1498 > 2c

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HB Date 080614 Page 1 of 1

Laboratory Certifications

List of current GEL Certifications as of 07 August 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

PCB Analysis

Case Narrative

PCB Case Narrative
WC-HANFORD, INC. (WCHN)
SDG XP0115

Method/Analysis Information

Procedure:	**Analysis of Polychlorinated Biphenyls by ECD**
Analytical Method:	SW846 3541/8082A
Prep Method:	SW846 3541
Analytical Batch Number:	1409300
Prep Batch Number:	1409297

Sample Analysis

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

Sample ID	Client ID
354073001	J1TXD8
354073002	J1TXD9
354073003	J1TXF0
1203142685	MB for batch 1409297
1203142686	Laboratory Control Sample (LCS)
1203142687	354073001(J1TXD8) Matrix Spike (MS)
1203142688	354073001(J1TXD8) 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 354073001 (J1TXD8) 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. Additionally, copper was added to all sample extracts to remove sulfur.

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

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: XP0115 GEL Work Order: 354073 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: Jimin Cao **Name: Jimin Cao**

Date: 11 AUG 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: August 7, 2014

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

Client SDG: XP0115

Client Sample ID: J1TXD8
Sample ID: 354073001
Matrix: SOIL
Collect Date: 05-AUG-14 08:20
Receive Date: 06-AUG-14
Collector: Client
Moisture: 2.35%

Project: WCHN00313
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.13	1.13	3.40	ug/kg	1	YS1	08/06/14	1925	1409300	1
Aroclor-1221	U	1.13	1.13	3.40	ug/kg	1					
Aroclor-1232	U	1.13	1.13	3.40	ug/kg	1					
Aroclor-1242	U	1.13	1.13	3.40	ug/kg	1					
Aroclor-1248	U	1.13	1.13	3.40	ug/kg	1					
Aroclor-1254	U	1.13	1.13	3.40	ug/kg	1					
Aroclor-1260	U	1.13	1.13	3.40	ug/kg	1					
Aroclor-1262	U	1.13	1.13	3.40	ug/kg	1					
Aroclor-1268	U	1.13	1.13	3.40	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	SJW1	08/06/14	1106	1409297

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 Solid Automated Soxhlet "Dry Weight Corrected"	3.63 ug/kg	6.81	53.4	(44%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.17 ug/kg	6.81	75.9	(35%-119%)

Notes:

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

Certificate of Analysis

Report Date: August 7, 2014

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

Client SDG: XP0115

Client Sample ID: J1TXD9
Sample ID: 354073002
Matrix: SOIL
Collect Date: 05-AUG-14 08:30
Receive Date: 06-AUG-14
Collector: Client
Moisture: 2.7%

Project: WCHN00313
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.14	1.14	3.42	ug/kg	1	YS1	08/06/14	1959	1409300	1
Aroclor-1221	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1232	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1242	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1248	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1254	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1260	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1262	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1268	U	1.14	1.14	3.42	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	SJW1	08/06/14	1106	1409297

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 Solid Automated Soxhlet "Dry Weight Corrected"	4.73 ug/kg	6.84	69.1	(44%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.09 ug/kg	6.84	74.3	(35%-119%)

Notes:

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

Certificate of Analysis

Report Date: August 7, 2014

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

Client SDG: XP0115

Client Sample ID: J1TXF0
Sample ID: 354073003
Matrix: SOIL
Collect Date: 05-AUG-14 08:40
Receive Date: 06-AUG-14
Collector: Client
Moisture: 2.89%

Project: WCHN00313
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.14	1.14	3.43	ug/kg	1	YS1	08/06/14	2010	1409300	1
Aroclor-1221	U	1.14	1.14	3.43	ug/kg	1					
Aroclor-1232	U	1.14	1.14	3.43	ug/kg	1					
Aroclor-1242	U	1.14	1.14	3.43	ug/kg	1					
Aroclor-1248	U	1.14	1.14	3.43	ug/kg	1					
Aroclor-1260	J	1.67	1.14	3.43	ug/kg	1					
Aroclor-1262	U	1.14	1.14	3.43	ug/kg	1					
Aroclor-1268	U	1.14	1.14	3.43	ug/kg	1					
Aroclor-1254	J	1.48	1.14	3.43	ug/kg	1	YS1	08/06/14	2010	1409300	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	SJW1	08/06/14	1106	1409297

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 Solid Automated Soxhlet "Dry Weight Corrected"	3.96 ug/kg	6.87	57.7	(44%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.72 ug/kg	6.87	68.8	(35%-119%)

Notes:

Quality Control Summary

QC Summary

Report Date: August 7, 2014

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

Contact: **Joan Kessner**

Workorder: **354073** **Client SDG:** XP0115 **Project Description:** RC-233 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatiles-PCB										
Batch 1409300										
QC1203142686 LCS										
Aroclor-1016	33.3			26.0	ug/kg		78.1	(39%-120%)	YS1	08/06/14 19:13
Aroclor-1260	33.3			29.5	ug/kg		88.6	(50%-116%)		
**4cmx	6.66			4.87	ug/kg		73.1	(44%-106%)		
**Decachlorobiphenyl	6.66			5.22	ug/kg		78.3	(35%-119%)		
QC1203142685 MB										
Aroclor-1016			U	1.11	ug/kg					08/06/14 19:02
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			4.35	ug/kg		65.4	(44%-106%)		
**Decachlorobiphenyl	6.66			4.86	ug/kg		73	(35%-119%)		
QC1203142687 354073001 MS										
Aroclor-1016	34.0	U	1.13	23.4	ug/kg		68.9	(25%-125%)		08/06/14 19:36
Aroclor-1260	34.0	U	1.13	28.9	ug/kg		84.9	(28%-127%)		
**4cmx	6.80		3.63	4.63	ug/kg		68.2	(44%-106%)		
**Decachlorobiphenyl	6.80		5.17	5.36	ug/kg		78.8	(35%-119%)		

QC Summary

Workorder: 354073 **Client SDG:** XP0115 **Project Description:** RC-233 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB												
Batch 1409300												
QC1203142688 354073001 MSD												
Aroclor-1016	34.1	U	1.13		23.2	ug/kg	0.953	68	(0%-30%)	YS1	08/06/14	19:47
Aroclor-1260	34.1	U	1.13		28.6	ug/kg	0.916	83.8	(0%-30%)			
**4cmx	6.82		3.63		4.58	ug/kg		67.2	(44%-106%)			
**Decachlorobiphenyl	6.82		5.17		5.20	ug/kg		76.3	(35%-119%)			

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 (0rganics 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: 1409297 **Verified by:** _____
Analyst: Sirena White
Method: SW846 3541

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

Sample ID	Run Date	Aliquot (g)	Clean Up 1	Clean Up Amount 1 (mL)	Post Clean Up Amount 1 (mL)	Final Volume (mL)	Prepped Factor (mL/g)
1203142685 MB	06-AUG-2014 11:06:00	30.05	H2SO4/KMnO4	2	9	1	0.03328
1203142686 LCS	06-AUG-2014 11:06:00	30.02	H2SO4/KMnO4	2	9	1	0.03331
354073001	06-AUG-2014 11:06:00	30.09	H2SO4/KMnO4	2	9	1	0.03323
1203142687 MS (354073001)	06-AUG-2014 11:06:00	30.13	H2SO4/KMnO4	2	9	1	0.03319
1203142688 MSD (354073001)	06-AUG-2014 11:06:00	30.03	H2SO4/KMnO4	2	9	1	0.0333
354073002	06-AUG-2014 11:06:00	30.05	H2SO4/KMnO4	2	9	1	0.03328
354073003	06-AUG-2014 11:06:00	30	H2SO4/KMnO4	2	9	1	0.03333

Type	Sample Id	Description	Serial Number	Spike Amt	Units
LCS	1203142686	PCB Laboratory Control	WE140714-10	1	mL
MS	1203142687	PCB Laboratory Control	WE140714-10	1	mL
MSD	1203142688	PCB Laboratory Control	WE140714-10	1	mL
SURR	All	PEST LOW LEVEL SURROGATE 200 UG/L	WE140516-01	1	mL
REGNT	All	Hexane	140606-B6	120	mL
REGNT	All	1:1 sulfuric acid	2130267	5	mL
REGNT	All	5% Potassium Permanganate	2134734	5	mL
SOURC	All	SODIUM SULFATE	2127169	30	g

Comments:

Final Solvent: Hexane
Verified by: MD
Clean-up: H2SO4/KMnO4
Prior to Clean-up: 2mL
Clean-up Initials: SJW
Clean-up SOP: GL-OA-E-037 Rev. 1
Clean-up Date: 08-06-14

All samples were powdery and dusty and contained rocks.