

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

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt

H4-21

KW 11/17/14
INITIAL/DATE

COMMENTS:

SDG XP0159

SAF-RC-233

Rad only

Chem only

Rad & Chem

Complete

Partial

Sample Location: 100-B-35:1, 151-B electrical switchyard



November 10, 2014

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

Re: RC-233 Soil
Work Order: 360603
SDG: XP0159

Dear Joan Kessner:

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

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

Sincerely,

Orlette Johnson
Project Manager

Purchase Order: 1510
Chain of Custody: RC-233-072
Enclosures



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Case Narrative

**Receipt Narrative
for
WC-HANFORD, INC.
SDG: XP0159
Work Order: 360603**

November 10, 2014

Laboratory Identification:

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

Summary:

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

Sample Identification: The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
360603001	J1V1D8
360603002	J1V1D9
360603003	J1V1F0
360603004	J1V1F1
360603005	J1V1F2

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
WEBER, HC

Project Designation
100-IU-2 & 100-IU-6 Remaining Waste Sites

Company Contact
Joan Kessner
Telephone No.
375-4688

Project Coordinator
KESSNER, JH

Price Code
RC-233-072

SAF No.
RC-233

Method of Shipment
Commerical Carrier

Bill of Lading/Air Bill No.
See OSPC

Company Contact
Joan Kessner
Telephone No.
375-4688

Sampling Location
100-B-35.1, 151-B Electrical switchyard

Field Logbook No.
EL-1667-02

COA
010B352600

Offsite Property No.
A131267

Shipped To
GEL Laboratories Charlston

Other Labs Shipped To

Preservation
Cool 4C

Type of Container
aG

No. of Container(s)
1

Volume
125mL

Sample Analysis
PCBs - 8082

TPH-Diesel Range - WTPH-D +

Sample No.

Matrix

Sample Date

Sample Time

Received By/Removed From

Date/Time

Received By/Removed From

Received By/Removed From

Date/Time



XP0159

Disposd By

Disposal Method

FINAL SAMPLE DISPOSITION

WCH-EE-011



SAMPLE RECEIPT & REVIEW FORM

Client: <u>WCHA</u>		SDG/AR/COC/Work Order: <u>360603</u>	
Received By: <u>P. Dent</u>		Date Received: <u>11/5/14</u>	
Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0/cpm</u>
Classified Radioactive II or III by RSO?		<input checked="" type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?		<input checked="" type="checkbox"/>	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		<input checked="" type="checkbox"/>	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		<input checked="" type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: <u>2c</u> Ice bags Blue ice 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: <u>FedEx Air</u> FedEx Ground UPS Field Services Courier Other <u>7717 3265 4713</u>

Comments (Use Continuation Form if needed):

Laboratory Certifications

List of current GEL Certifications as of 10 November 2014

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

FID Diesel Range Organics Analysis

Case Narrative

**FID Diesel Range Organics
WC-HANFORD, INC. (WCHN)
SDG XP0159**

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: 1433840
Prep Batch Number: 1433838

Sample Analysis

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

Sample ID	Client ID
360603001	J1V1D8
360603002	J1V1D9
360603003	J1V1F0
360603004	J1V1F1
360603005	J1V1F2
1203203711	MB for batch 1433838
1203203712	Laboratory Control Sample (LCS)
1203203713	360603001(J1V1D8) Matrix Spike (MS)
1203203714	360603001(J1V1D8) 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

Samples 360603004 (J1V1F1) and 360603005 (J1V1F2) did not meet surrogate recovery acceptance criteria due to dilution.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Sample 360603001 (J1V1D8) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS recovered slightly below the acceptance limits for Diesel Range Organics; however the MS and MSD duplicated the results well.

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

Samples 1203203713 (J1V1D8MS), 1203203714 (J1V1D8MSD), 360603001 (J1V1D8), 360603002 (J1V1D9), 360603004 (J1V1F1) and 360603005 (J1V1F2) were diluted due to high level of target analytes detected in the samples.

Sample Re-extraction/Re-analysis

Re-extractions 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. DER #1353196 was generated for this SDG.

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.

DATA EXCEPTION REPORT

Mo.Day Yr. 08-NOV-14	Division: Federal	Quality Criteria: Specifications	Type: Process
Instrument Type: GC/FID	Test / Method: NWTPH-Dx in Soil	Matrix Type: Solid	Client Code: WCHN
Batch ID: 1433840	Sample Numbers: See Below		
<p>Potentially affected work order(s)(SDG): 360603(XP0159)</p> <p>Application Issues: Failed Recovery for MS/PS Failed Yield for Surrogates</p>			
Specification and Requirements Exception Description:		DER Disposition:	
<p>1. Samples 360603004 and 360603005 did not meet surrogate recovery acceptance limits.</p> <p>2. The MS(1203203713) did not meet spike recovery acceptance limits.</p>		<p>1. Samples were diluted due to over-range target analyte. As a result, the surrogates were diluted out of their acceptance limit. Data were reported.</p> <p>2. The MS recovered slightly below the acceptance limits for Diesel Range Organics; however, the MSD was duplicated the MS results well as the RPD was well within the acceptance limits. Data were reported.</p>	

Originator's Name:
Benjamin Taft 08-NOV-14

Data Validator/Group Leader:
Jimin Cao 10-NOV-14

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: XP0159 GEL Work Order: 360603 Project: RC-233 Soil

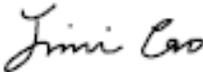
The Qualifiers in this report are defined as follows:

- D Results are reported from a diluted aliquot of sample.
- 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
- 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.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

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

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

Signature: 

Name: Jimin Cao

Date: 11 NOV 2014

Title: Data Validator

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: November 10, 2014

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

Client SDG: XP0159

Client Sample ID: J1V1D8	Project: WCHN00313
Sample ID: 360603001	Client ID: WCHN001
Matrix: Soil	
Collect Date: 03-NOV-14 08:03	
Receive Date: 05-NOV-14	
Collector: Client	
Moisture: 16%	

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)	DT	152000	5150	15800	ug/kg	2	BYT1	11/07/14	0931	1433840	1
Motor Oil (C20-C36)	D	135000	5150	15800	ug/kg	2					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	11/05/14	1730	1433838

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"	735 ug/kg	792	92.8	(50%-150%)

Notes:

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: November 10, 2014

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

Client SDG: XP0159

Client Sample ID: J1V1F1	Project: WCHN00313
Sample ID: 360603004	Client ID: WCHN001
Matrix: Soil	
Collect Date: 03-NOV-14 08:21	
Receive Date: 05-NOV-14	
Collector: Client	
Moisture: 16.8%	

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)	DT	1900000	130000	400000	ug/kg	50	BYT1	11/07/14	1246	1433840	1
Motor Oil (C20-C36)	D	1450000	130000	400000	ug/kg	50					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	11/05/14	1730	1433838

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"	0.00 ug/kg	800	0.00*	(50%-150%)

Notes:

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: November 10, 2014

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

Client SDG: XP0159

Client Sample ID: J1V1F2	Project: WCHN00313
Sample ID: 360603005	Client ID: WCHN001
Matrix: Soil	
Collect Date: 03-NOV-14 08:24	
Receive Date: 05-NOV-14	
Collector: Client	
Moisture: 22.3%	

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)	DT	6570000	278000	856000	ug/kg	100	BYT1	11/07/14	1325	1433840	1
Motor Oil (C20-C36)	D	3440000	278000	856000	ug/kg	100					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SXW3	11/05/14	1730	1433838

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"	0.00 ug/kg	856	0.00*	(50%-150%)

Notes:

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: November 10, 2014

Page 1 of 2

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

Workorder: 360603

Client SDG: XP0159

Project Description: RC-233 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Diesel Range Organics											
Batch	1433840										
QC1203203712	LCS										
Diesel Range Organics (C10-C20)	66500			47800	ug/kg		71.8	(70%-130%)	BYT1	11/07/14	17:36
Motor Oil (C20-C36)	66500			57700	ug/kg		86.8	(70%-130%)			
**o-Terphenyl	665			499	ug/kg		75.1	(50%-150%)			
QC1203203711	MB										
Diesel Range Organics (C10-C20)			U	2170	ug/kg					11/07/14	07:35
Motor Oil (C20-C36)			U	2170	ug/kg						
**o-Terphenyl	667			438	ug/kg		65.6	(50%-150%)			
QC1203203713	360603001 MS										
Diesel Range Organics (C10-C20)	79300	DT	152000	DT	206000	ug/kg	68.2*	(70%-130%)		11/07/14	10:10
Motor Oil (C20-C36)	79300	D	135000	D	203000	ug/kg	85.8	(70%-130%)			
**o-Terphenyl	793		735	844	ug/kg		107	(50%-150%)			
QC1203203714	360603001 MSD										
Diesel Range Organics (C10-C20)	79300	DT	152000	D	235000	ug/kg	13.3	105	(0%-20%)	11/07/14	10:49
Motor Oil (C20-C36)	79300	D	135000	D	229000	ug/kg	11.8	118	(0%-20%)		
**o-Terphenyl	793		735	767	ug/kg		96.7	(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

GEL LABORATORIES LLC

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

QC Summary

Workorder: 360603

Client SDG: XP0159

Project Description: RC-233 Soil

Page 2 of 2

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

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

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

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

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

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

Miscellaneous

Prep Logbook

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

Batch ID: 1433838 **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)
1203203711 MB	05-NOV-2014 17:30:00	30	1	0.03333
1203203712 LCS	05-NOV-2014 17:30:00	30.06	1	0.03327
360603001	05-NOV-2014 17:30:00	30.07	1	0.03326
1203203713 MS (360603001)	05-NOV-2014 17:30:00	30.03	1	0.0333
1203203714 MSD (360603001)	05-NOV-2014 17:30:00	30.02	1	0.03331
360603002	05-NOV-2014 17:30:00	30.02	1	0.03331
360603003	05-NOV-2014 17:30:00	30.05	1	0.03328
360603004	05-NOV-2014 17:30:00	30.07	1	0.03326
360603005	05-NOV-2014 17:30:00	30.08	1	0.03324

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1203203712	AZDRO SPIKE LCS STD,4000ug/ml	WFI141030-62	1	mL	Verified By: AV Final Solvent: CH2Cl2
MS	1203203713	AZDRO SPIKE LCS STD,4000ug/ml	WFI141030-62	1	mL	
MSD	1203203714	AZDRO SPIKE LCS STD,4000ug/ml	WFI141030-62	1	mL	
SURR	All	20 ppm surrogate	WE141001-04	1	mL	
REGNT	All	Methylene Chloride	2172960-D	120	mL	
SOURC	All	SODIUM SULFATE	2168618	30	g	

PCB Analysis

Case Narrative

**PCB Case Narrative
WC-HANFORD, INC. (WCHN)
SDG XP0159**

Method/Analysis Information

Procedure: Analysis of Polychlorinated Biphenyls by ECD
Analytical Method: SW846 3541/8082A
Prep Method: SW846 3541
Analytical Batch Number: 1433846
Prep Batch Number: 1433843

Sample Analysis

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

Sample ID	Client ID
360603001	J1V1D8
360603002	J1V1D9
360603003	J1V1F0
360603004	J1V1F1
360603005	J1V1F2
1203203719	MB for batch 1433843
1203203720	Laboratory Control Sample (LCS)
1203203721	360603002(J1V1D9) Matrix Spike (MS)
1203203722	360603002(J1V1D9) 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.

One or more of the five quantified peaks did not meet the acceptance criteria in CCV standards analyzed for this SDG; however, the average concentration of the five quantified peaks met the acceptance criteria.

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 360603002 (J1V1D9) 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

Samples 360603001 (J1V1D8), 360603004 (J1V1F1) and 360603005 (J1V1F2) were diluted due to high level of target analytes detected in the samples.

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
ECD8A.I_1	Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler	HP6890 Series ECD	Rtx-CLP I	30m x 0.25mm, 0.25um (Rtx-CLPesticide I)
ECD8A.I_2	Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler	HP6890 Series ECD	Rtx-CLP II	30m x 0.25mm, 0.20um (Rtx-CLPesticide II)

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: XP0159 GEL Work Order: 360603 Project: RC-233 Soil

The Qualifiers in this report are defined as follows:

D Results are reported from a diluted aliquot of sample.

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.

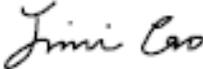
RA Indicates that sample is re-analyzed without re-extraction.

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: 07 NOV 2014

Title: Data Validator

Sample Data Summary

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Certificate of Analysis

Report Date: November 6, 2014

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

Client SDG: XP0159

Client Sample ID: J1V1D8	Project: WCHN00313
Sample ID: 360603001	Client ID: WCHN001
Matrix: Soil	
Collect Date: 03-NOV-14 08:03	
Receive Date: 05-NOV-14	
Collector: Client	
Moisture: 16%	

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	DU	13.2	13.2	39.6	ug/kg	10	JXM	11/06/14	0823	1433846	1
Aroclor-1221	DU	13.2	13.2	39.6	ug/kg	10					
Aroclor-1232	DU	13.2	13.2	39.6	ug/kg	10					
Aroclor-1242	DU	13.2	13.2	39.6	ug/kg	10					
Aroclor-1248	DU	13.2	13.2	39.6	ug/kg	10					
Aroclor-1254	DU	13.2	13.2	39.6	ug/kg	10					
Aroclor-1262	DU	13.2	13.2	39.6	ug/kg	10					
Aroclor-1268	DU	13.2	13.2	39.6	ug/kg	10					
Aroclor-1260	D	194	13.2	39.6	ug/kg	10	JXM	11/06/14	0823	1433846	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	SXW3	11/05/14	1726	1433843

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"	5.09 ug/kg	7.93	64.3	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.02 ug/kg	7.93	63.4	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: November 6, 2014

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

Client SDG: XP0159

Client Sample ID: J1V1D9	Project: WCHN00313
Sample ID: 360603002	Client ID: WCHN001
Matrix: Soil	
Collect Date: 03-NOV-14 08:08	
Receive Date: 05-NOV-14	
Collector: Client	
Moisture: 10.2%	

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	1.24	1.24	3.71	ug/kg	1	JXM	11/06/14	0837	1433846	1
Aroclor-1221	U	1.24	1.24	3.71	ug/kg	1					
Aroclor-1232	U	1.24	1.24	3.71	ug/kg	1					
Aroclor-1242	U	1.24	1.24	3.71	ug/kg	1					
Aroclor-1248	U	1.24	1.24	3.71	ug/kg	1					
Aroclor-1254	U	1.24	1.24	3.71	ug/kg	1					
Aroclor-1262	U	1.24	1.24	3.71	ug/kg	1					
Aroclor-1268	U	1.24	1.24	3.71	ug/kg	1					
Aroclor-1260	J	2.07	1.24	3.71	ug/kg	1	JXM	11/06/14	0837	1433846	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	SXW3	11/05/14	1726	1433843

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"	3.94 ug/kg	7.43	53.1	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	4.11 ug/kg	7.43	55.3	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: November 6, 2014

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

Client SDG: XP0159

Client Sample ID: J1V1F0	Project: WCHN00313
Sample ID: 360603003	Client ID: WCHN001
Matrix: Soil	
Collect Date: 03-NOV-14 08:16	
Receive Date: 05-NOV-14	
Collector: Client	
Moisture: 4.89%	

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	1.17	1.17	3.50	ug/kg	1	JXM	11/06/14	0920	1433846	1
Aroclor-1221	U	1.17	1.17	3.50	ug/kg	1					
Aroclor-1232	U	1.17	1.17	3.50	ug/kg	1					
Aroclor-1248	U	1.17	1.17	3.50	ug/kg	1					
Aroclor-1254	U	1.17	1.17	3.50	ug/kg	1					
Aroclor-1260	U	1.17	1.17	3.50	ug/kg	1					
Aroclor-1262	U	1.17	1.17	3.50	ug/kg	1					
Aroclor-1268	U	1.17	1.17	3.50	ug/kg	1					
Aroclor-1242		6.02	1.17	3.50	ug/kg	1	JXM	11/06/14	0920	1433846	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	SXW3	11/05/14	1726	1433843

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"	4.85 ug/kg	7.01	69.2	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.18 ug/kg	7.01	73.9	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: November 6, 2014

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

Client SDG: XP0159

Client Sample ID: J1V1F1	Project: WCHN00313
Sample ID: 360603004	Client ID: WCHN001
Matrix: Soil	
Collect Date: 03-NOV-14 08:21	
Receive Date: 05-NOV-14	
Collector: Client	
Moisture: 16.8%	

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	DU	13.3	13.3	40.0	ug/kg	10	JXM	11/06/14	0935	1433846	1
Aroclor-1221	DU	13.3	13.3	40.0	ug/kg	10					
Aroclor-1232	DU	13.3	13.3	40.0	ug/kg	10					
Aroclor-1242	DU	13.3	13.3	40.0	ug/kg	10					
Aroclor-1248	DU	13.3	13.3	40.0	ug/kg	10					
Aroclor-1254	DU	13.3	13.3	40.0	ug/kg	10					
Aroclor-1262	DU	13.3	13.3	40.0	ug/kg	10					
Aroclor-1268	DU	13.3	13.3	40.0	ug/kg	10					
Aroclor-1260	D	353	13.3	40.0	ug/kg	10	JXM	11/06/14	0935	1433846	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	SXW3	11/05/14	1726	1433843

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"	4.53 ug/kg	8.01	56.5	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	4.67 ug/kg	8.01	58.3	(25%-131%)

Notes:

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: November 6, 2014

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

Client SDG: XP0159

Client Sample ID: J1V1F2	Project: WCHN00313
Sample ID: 360603005	Client ID: WCHN001
Matrix: Soil	
Collect Date: 03-NOV-14 08:24	
Receive Date: 05-NOV-14	
Collector: Client	
Moisture: 22.3%	

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	DU	14.3	14.3	42.9	ug/kg	10	JXM	11/06/14	0949	1433846	1
Aroclor-1221	DU	14.3	14.3	42.9	ug/kg	10					
Aroclor-1232	DU	14.3	14.3	42.9	ug/kg	10					
Aroclor-1242	DU	14.3	14.3	42.9	ug/kg	10					
Aroclor-1248	DU	14.3	14.3	42.9	ug/kg	10					
Aroclor-1254	DU	14.3	14.3	42.9	ug/kg	10					
Aroclor-1262	DU	14.3	14.3	42.9	ug/kg	10					
Aroclor-1268	DU	14.3	14.3	42.9	ug/kg	10					
Aroclor-1260	DJ	29.8	14.3	42.9	ug/kg	10	JXM	11/06/14	0949	1433846	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	SXW3	11/05/14	1726	1433843

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"	8.10 ug/kg	8.58	94.4	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	3.79 ug/kg	8.58	44.1	(25%-131%)

Notes:

Quality Control Summary

GEL LABORATORIES LLC

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QC Summary

Report Date: November 6, 2014

Page 1 of 2

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

Workorder: 360603

Client SDG: XP0159

Project Description: RC-233 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	1433846										
QC1203203720	LCS										
Aroclor-1016	33.3			27.4	ug/kg		82.4	(44%-97%)	JXM	11/06/14	08:11
Aroclor-1260	33.3			29.2	ug/kg		87.6	(49%-109%)			
**4cmx	6.66			6.07	ug/kg		91.2	(29%-106%)			
**Decachlorobiphenyl	6.66			7.54	ug/kg		113	(25%-131%)			
QC1203203719	MB										
Aroclor-1016			U	1.11	ug/kg					11/06/14	07:59
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	6.67			6.15	ug/kg		92.3	(29%-106%)			
**Decachlorobiphenyl	6.67			7.28	ug/kg		109	(25%-131%)			
QC1203203721	360603002	MS									
Aroclor-1016	37.1	U	1.24	14.3	ug/kg		38.5	(22%-127%)		11/06/14	08:52
Aroclor-1260	37.1	J	2.07	19.5	ug/kg		47	(18%-130%)			
**4cmx	7.42		3.94	3.95	ug/kg		53.3	(29%-106%)			
**Decachlorobiphenyl	7.42		4.11	4.46	ug/kg		60.1	(25%-131%)			

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QC Summary

Workorder: **360603**

Client SDG: XP0159

Project Description: RC-233 Soil

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	1433846										
QC1203203722 360603002 MSD											
Aroclor-1016	37.1	U	1.24	15.4	ug/kg	7.40	41.5	(0%-30%)	JXM	11/06/14	09:06
Aroclor-1260	37.1	J	2.07	20.3	ug/kg	4.07	49.3	(0%-30%)			
**4cmx	7.41			3.94	4.18	ug/kg	56.4	(29%-106%)			
**Decachlorobiphenyl	7.41			4.11	4.65	ug/kg	62.7	(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: 1433843 Verified by: _____
 Analyst: Shannon Whitehead
 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)
1203203719 MB	05-NOV-2014 17:26:00	30	H2SO4/KM 2 nO4	9	1	0.03333
1203203720 LCS	05-NOV-2014 17:26:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
360603001	05-NOV-2014 17:26:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
360603002	05-NOV-2014 17:26:00	30	H2SO4/KM 2 nO4	9	1	0.03333
1203203721 MS (360603002)	05-NOV-2014 17:26:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
1203203722 MSD (360603002)	05-NOV-2014 17:26:00	30.06	H2SO4/KM 2 nO4	9	1	0.03327
360603003	05-NOV-2014 17:26:00	30	H2SO4/KM 2 nO4	9	1	0.03333
360603004	05-NOV-2014 17:26:00	30.02	H2SO4/KM 2 nO4	9	1	0.03331
360603005	05-NOV-2014 17:26:00	30	H2SO4/KM 2 nO4	9	1	0.03333

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1203203720	PCB Laboratory Control	WE141103-06	1	mL	Final Solvent: Hexane Verified By: AV Clean up Initials: SLW Clean up SOP: GL-OA-E-037 Clean up Date: 11-05-14
MS	1203203721	PCB Laboratory Control	WE141103-06	1	mL	
MSD	1203203722	PCB Laboratory Control	WE141103-06	1	mL	
SURR	All	PEST LOW LEVEL SURROGATE 200 UG/L	WE141016-01	1	mL	
REGNT	All	Hexane	141024-B10	120	mL	
REGNT	All	1:1 sulfuric acid	2170235	5	mL	
REGNT	All	5% Potassium Permanganate	2176611	5	mL	
SOURC	All	SODIUM SULFATE	2168618	30	g	