

SAF-RC-174
ARRA Remaining Sites Confirmation
Sampling – Soil Full Protocol
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt

H4-21

KW 12/31/10
INITIAL/DATE

COMMENTS:

SDG K2573

SAF-RC-174

Rad only

Chem only

Rad & Chem

Complete

Partial

Sample Location: 100-K-86 Surface Samples





264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

18 December 2010

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H9-03
Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

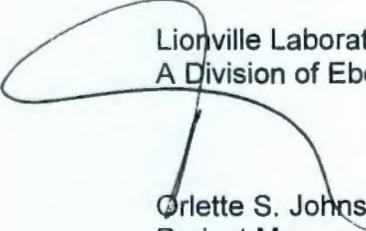
Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	1011106
SDG #	K2573
SAF #	RC-174
Date Received	11/12/10
# Samples	6
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	X
Glycols	
DRO/KRO/GRO	X
PAHs	X
Herbicides	
Metals	X
Inorganics	X

The electronic data deliverable (EDD) has been emailed. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Laboratory
A Division of Eberline Analytical Corporation


Orlette S. Johnson
Project Manager





264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 14:15

Analytical Report for Wet Chemistry

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1B4T0	1011106-01	Soil	11/10/2010 08:00	11/12/2010 10:20
J1B4T1	1011106-02	Soil	11/10/2010 08:05	11/12/2010 10:20
J1B4T2	1011106-03	Soil	11/10/2010 08:30	11/12/2010 10:20
J1B4T3	1011106-04	Soil	11/10/2010 09:00	11/12/2010 10:20
J1B4T4	1011106-05	Soil	11/10/2010 09:30	11/12/2010 10:20
J1B4T5	1011106-06	Soil	11/10/2010 08:05	11/12/2010 10:20



A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-174 K2573

LVL#: 1011106

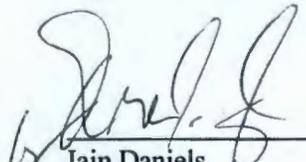
Date Received: 11-12-10

INORGANIC NARRATIVE

1. This narrative covers the analyses of 6 soil samples.
2. The samples were prepared and analyzed in accordance with the methods indicated on the data summary report.

Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.
4. The results presented in this report are derived from samples that met LvL's sample acceptance policy.
5. The method blank for Hexavalent Chromium (Cr^{6+}) was within the method criteria.
6. The Laboratory Control Samples (LCS) for Cr^{6+} were within the laboratory control limits.
7. The matrix spike recoveries Cr^{6+} were within the 75-125% control limits.
8. The replicate analysis for Cr^{6+} was within the 20% Relative Percent Difference (RPD) control limit.
9. Results for soil samples are reported on a dry weight basis.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory

njp011-106

12/17/10
Date



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 14:15

Notes and Definitions

- U Analyte included in the analysis, but not detected
- D Results reported from a dilution; related reporting limits are elevated due to the presence of an interference or a high target value
- * Value outside QC acceptance criteria
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- Dry Sample results reported on a dry weight basis
- Wet Sample results reported on a wet weight basis
- RPD Relative Percent Difference
- LOD Limit of Detection (LOD): the minimum estimated concentration of a target analyte that can be detected reliably. Concentrations at the LOD or between the LOD and LOQ are flagged estimated with either a 'J' qualifier or client-specific qualifier.
- LOQ Limit of Quantitation (LOQ): the minimum concentration of a target analyte that can be quantified reliably



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 14:15

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
J1B4T0 (1011106-01) Soil									
%Solids	100	0.1	0.1	% by Weight	1	L011268	11/17/2010	11/17/2010	SM2540G
J1B4T1 (1011106-02) Soil									
%Solids	96.8	0.1	0.1	% by Weight	1	L011268	11/17/2010	11/17/2010	SM2540G
Hexavalent Chromium	0.21 U	0.21	0.52	mg/kg dry	1	L011283	11/16/2010	11/16/2010	SW846 7196A
J1B4T2 (1011106-03) Soil									
%Solids	87.5	0.1	0.1	% by Weight	1	L011268	11/17/2010	11/17/2010	SM2540G
Hexavalent Chromium	0.84	0.23	0.57	mg/kg dry	1	L011283	11/16/2010	11/16/2010	SW846 7196A
J1B4T3 (1011106-04) Soil									
%Solids	87.0	0.1	0.1	% by Weight	1	L011268	11/17/2010	11/17/2010	SM2540G
Hexavalent Chromium	0.23 U	0.23	0.58	mg/kg dry	1	L011283	11/16/2010	11/16/2010	SW846 7196A
J1B4T4 (1011106-05) Soil									
%Solids	97.2	0.1	0.1	% by Weight	1	L011268	11/17/2010	11/17/2010	SM2540G
Hexavalent Chromium	0.21 U	0.21	0.51	mg/kg dry	1	L011283	11/16/2010	11/16/2010	SW846 7196A
J1B4T5 (1011106-06) Soil									
%Solids	96.8	0.1	0.1	% by Weight	1	L011268	11/17/2010	11/17/2010	SM2540G
Hexavalent Chromium	0.21 U	0.21	0.52	mg/kg dry	1	L011283	11/16/2010	11/16/2010	SW846 7196A



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-174 Project Number: K2573 Project Manager: Joan Kessner	Reported: 12/06/2010 14:15
---	---	-------------------------------

Wet Chemistry - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L011283 - Default Prep										
Blank (L011283-BLK1) Prepared & Analyzed: 11/16/2010										
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg wet						
LCS (L011283-BS1) Prepared & Analyzed: 11/16/2010										
Hexavalent Chromium	4.06	0.20	0.50	mg/kg wet	4.0000		102	80-120		
LCS (L011283-BS2) Prepared & Analyzed: 11/16/2010										
Hexavalent Chromium	993 D	20.0	50.0	mg/kg wet	1024.0		97	80-120		
Duplicate (L011283-DUP4) Source: 1011106-02 Prepared & Analyzed: 11/16/2010										
Hexavalent Chromium	0.21 U	0.21	0.52	mg/kg dry		0.21 U				20
Matrix Spike (L011283-MS7) Source: 1011106-02 Prepared & Analyzed: 11/16/2010										
Hexavalent Chromium	4.31	0.21	0.52	mg/kg dry	4.1328	0.21 U	104	75-125		
Matrix Spike (L011283-MS8) Source: 1011106-02 Prepared & Analyzed: 11/16/2010										
Hexavalent Chromium	1090 D	20.7	51.7	mg/kg dry	1117.8	0.21 U	98	75-125		



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

1011106

Client <u>WC Hanford SAK# RC-174</u>	Refrigerator #	A	B	C	D				
Est. Final Proj. Sampling Date _____	#/Type Container	Liquid							
Project# _____		Solid	1AG	1AG	1AG	1AG			
Project Contact/Phone# _____	Volume		120	120	120	125			
Lionville Laboratory Project Manager <u>O. JOHNSON</u>	Preservatives		-	-	-				
QC <u>SW</u> Del <u>STD</u> TAT <u>15 days</u>									

Date Rec'd <u>11-12-10</u>	Date Due <u>11-27-10</u>	ANALYSES REQUESTED	ORGANIC	INORG
		VOA	BNA	PCB
		Herb	PAHs	TPH
				Metal

MATRIX CODES: S- Soil SE- Sediment SO- Solid SL- Sludge W- Water O- Oil A- Air DS- Drum DL- Drum L- Liquids EP/TCLP Leachate WI- Wipe X- Other F- Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
			MS	MSD				8082	8310	ARO	Mx	CR6								
			01	J1B4T0						Soil	11-10-10	0800								
02	I 1			I		0805	X	X	X	X	X	X	X	X	X	X	X	X	X	X
03	I 2			I		0830	X	X	X	X	X	X	X	X	X	X	X	X	X	X
04	I 3			I		0900	X	X	X	X	X	X	X	X	X	X	X	X	X	X
05	I 4			I		0930	X	X	X	X	X	X	X	X	X	X	X	X	X	X
06	I 5			I	11-12-10	0805	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Special Instructions: Run matrix QC

Special Instructions:

- _____
- _____
- _____
- _____
- _____
- _____

Relinquished by	Received by	Date	Time
<u>Fed Ep</u>	<u>VAH</u>	<u>11/2/10</u>	<u>1020</u>

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL			
REWRITTEN			

0000000000

10/11/10

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-174-008	Page 1 of 2
Collector <i>WT Sevensmith</i>	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code <i>86</i>	Data Turnaround 15 Days
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr	Sampling Location 100-K-86 <i>Surface Samples</i>	SAF No. RC-174		<i>JES</i> <i>11-10-10</i>		
Ice Chest No. <i>AFS-04-036</i>	Field Logbook No. EL-1649	COA S10K86A000	Method of Shipment Fed Ex			
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A100614</i>	Bill of Lading/Air Bill No. See OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS <i>None JPD 11/10/10</i> Special Handling and/or Storage <i>Cool 4C JPD 11/10/10</i>	Preservation	D None	C Cool 4C	Cool 4C	B Cool 4C	A Cool 4C	None	Cool 4C		
	Type of Container	aG	aG	aG	aG	aG	P	aG		
	No. of Container(s)	1	1	1	1	1	1	0		
	Volume	125mL	120mL	60mL	120mL	120mL	500mL	125mL		

SAMPLE ANALYSIS				See item (1) in Special Instructions.	TPH-Diesel Range - WTPH-D +	VOA - 8260A (TCL)	PAHs - 8310	PCBs - 8082	See item (2) in Special Instructions.	<i>hexavalent Chromium - 7196</i>		
-----------------	--	--	--	---------------------------------------	-----------------------------	-------------------	-------------	-------------	---------------------------------------	-----------------------------------	--	--

Sample No.	Matrix *	Sample Date	Sample Time									
J1B4T0	SOIL	11/10/10	0800	✓			✓					EB
J1B4T1	SOIL	11/10/10	0805	✓	✓		✓	✓		✓		SS 1
J1B4T2	SOIL	11/10/10	0830	✓	✓		✓	✓		✓		SS 2
J1B4T3	SOIL	11/10/10	0900	✓	✓		✓	✓		✓		SS 3
J1B4T4	SOIL	11/10/10	0930	✓	✓		✓	✓		✓		SS 4

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <i>Whitney Sevensmith</i>	Date/Time <i>1040</i>	Received By/Stored In <i>JR DeBuique</i>	Date/Time <i>1040</i>	(1) ICP Metals - 6010TR (Close-out List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc]; Mercury - 7471 - (CV) [Mercury] (2) Gamma Spec (Client List) [Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gross Alpha & Gross Beta <i>Use material from ICP Metals for Chromium-Hex. JPD 6/2/10</i>	S=Soil SE=Settlement SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Truss WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From <i>JR DeBuique</i>	Date/Time <i>1100</i>	Received By/Stored In <i>J.E. Beaulieu</i>	Date/Time <i>1100</i>					
Relinquished By/Removed From <i>J.E. Beaulieu</i>	Date/Time <i>1200</i>	Received By/Stored In <i>J.E. Beaulieu</i>	Date/Time <i>11-10-10</i>					
Relinquished By/Removed From <i>J.E. Beaulieu</i>	Date/Time <i>0915</i>	Received By/Stored In <i>FED EX</i>	Date/Time					
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time <i>11-12-10</i>	Received By/Stored In <i>Vitor Hernandez</i>	Date/Time <i>1020</i>					

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time



10/11/10

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-174-008	Page 2 of 2
Collector WT Sexsmith	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 88	Data Turnaround 15 Days	
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr		Sampling Location 100-K-86 Surface Samples	SAF No. RC-174		JES 11-10-10		
Ice Chest No. AFS-04-036	Field Logbook No. EL-1649	COA S10K86A000	Method of Shipment Fed Ex				
Shipped To EBERLINE SERVICES / <u>LIONVILLE</u>		Offsite Property No. A100614	Bill of Lading/Air Bill No. See OSPC				

POSSIBLE SAMPLE HAZARDS/REMARKS None JSD 11/10/10 Special Handling and/or Storage COOL 4C JSD 11/10/10	Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	Cool 4C			
	Type of Container	aG	aG	aG	aG	aG	P	aG			
	No. of Container(s)	1	1	1	1	1	1	0			
	Volume	125mL	120mL	60mL	120mL	120mL	500mL	125mL			

SAMPLE ANALYSIS		See item (1) in Special Instructions.	TPH-Diesel Range - WTPH-D+	VOA - 8260A (TCL)	PAHs - 8310	PCBs - 8082	See item (2) in Special Instructions.	Chromium Hex - 7196			
-----------------	--	---------------------------------------	----------------------------	-------------------	-------------	-------------	---------------------------------------	---------------------	--	--	--

Sample No.	Matrix *	Sample Date	Sample Time								
J1B4T5	SOIL	11/12/10	0805	✓	✓	✓	✓	✓			D

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From Whitney Sexsmith 11/10/10	Date/Time 1040	Received By/Stored In J.R. Schindler 11/10/10	Date/Time 1046	(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) [Mercury] (2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta Use material from ICP Metals for Chromium-Hex JSD 6/2/10				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trash W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From J.R. Schindler 11/10/10	Date/Time 1100	Received By/Stored In J.R. Schindler 11/10/10	Date/Time 1100					
Relinquished By/Removed From J.R. Schindler 11/10/10	Date/Time 1200	Received By/Stored In J.E. Beaulieu 11-10-10	Date/Time 1200					
Relinquished By/Removed From J.E. Beaulieu 11-11-10	Date/Time 0915	Received By/Stored In FED EX	Date/Time					
Relinquished By/Removed From Victor Hernandez 11-12-10	Date/Time 1020	Received By/Stored In Victor Hernandez 11-12-10	Date/Time 1020					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					



LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Lionville Laboratory
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *W. Hartford*
 Project/SAE/SOW/Release #: *RC-174*

Date: *11/12/10*

LvL Batch #: *1011106*

Sample Custodian: *Tutor Newsome*

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | |
|--|---|---|
| 1. Samples Hand Delivered or <u>Shipped?</u> | Carrier <i>Fed Ex</i> | Airbill # <i>7964 4077 6048</i> |
| 2. Custody Seals on coolers or shipping containers intact, signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Comments: |
| 4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5. Samples received cooled or ambient? | Temp <i>2.1</i> °C | Cooler # <i>AFS-04-036</i> |
| How was the temperature taken? | <input checked="" type="checkbox"/> IR <input type="checkbox"/> Temp. Blank | <input type="checkbox"/> Other (Specify): |
| Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 7. COC (Client & LvL) signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 9. All samples on COC received? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| All samples received on COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 10. All sample label information matches COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 11. Samples properly preserved? (If #5 is no, then this is no.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 12. Samples received within hold times? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| Short holds taken to wet lab? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 16. Project Manager contacted concerning any discrepancies? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| Person Contacted _____ | | Date _____ |



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

RECEIVED
11/10/2010

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 09:08

Analytical Report for Metals by SW846 6000/7000 series

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1B4T0	1011106-01	Soil	11/10/2010 08:00	11/12/2010 10:20
J1B4T1	1011106-02	Soil	11/10/2010 08:05	11/12/2010 10:20
J1B4T2	1011106-03	Soil	11/10/2010 08:30	11/12/2010 10:20
J1B4T3	1011106-04	Soil	11/10/2010 09:00	11/12/2010 10:20
J1B4T4	1011106-05	Soil	11/10/2010 09:30	11/12/2010 10:20
J1B4T5	1011106-06	Soil	11/10/2010 08:05	11/12/2010 10:20



264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-174
LVL#: 1011106
SDG/SAF#: K2573/RC-174

W.O.#: 60049-001-001-0001-00
Date Received: 11-12-10

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 6 soil samples.
2. The samples were prepared and analyzed in accordance with methods listed on the data report forms.

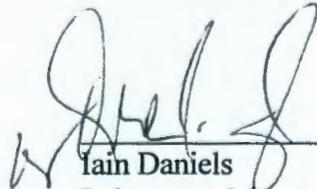
To accommodate the data reporting system, QC samples L011234-MB1 and L011234-SRM1 were renamed L011234-MB3 and L011234-SRM3.

3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).
7. The preparation/method blank for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), samples greater than 20X MB value}.
 - a). The MB result for Selenium was greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} and all samples read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

- 8. All ICP Interference Check Standards were within control limits.
- 9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer.
- 10. The matrix spike (MS) recoveries for 4 analytes were outside the 75-125% control limits.
- 11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

<u>Sample ID</u>	<u>Element</u>	<u>PDS Concentration (ppb)</u>	<u>PDS % Recovery</u>
J1B4T1	Aluminum	22,000	112.2
	Antimony	100	91.4
	Iron	42,000	97.6
	Silicon	2,100	132.5

- 12. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limit criteria. The $\pm 20\%$ RPD control limit applies to sample results greater than ten times the MDL.
- 13. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.
- 14. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
- 15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.



 Iain Daniels
 Laboratory Manager
 Lionville Laboratory

12/6/10

 Date



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 09:08

Notes and Definitions

- U Analyte included in the analysis, but not detected
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- B Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag)
- * Value outside QC acceptance criteria
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- wet Sample results reported on a wet weight basis
- RPD Relative Percent Difference



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:08

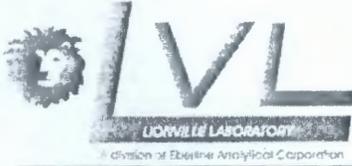
J1B4T0
1011106-01 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Metals by SW846 6000/7000 series

Aluminum	327		4.39	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Antimony	0.526	U	0.526	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Arsenic	1.75		0.877	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Barium	2.89		0.439	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Beryllium	0.0996	B	0.175	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Boron	1.75	U	1.75	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cadmium	0.175	U	0.175	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Calcium	55.0	B	87.7	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Chromium	0.378		0.175	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cobalt	1.75	U	1.75	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Copper	0.877	U	0.877	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Iron	1380		17.5	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Lead	1.18		0.439	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Magnesium	43.7	B	65.8	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Manganese	9.18		4.39	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Molybdenum	1.75	U	1.75	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Nickel	0.485	B	3.51	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Potassium	87.7	B	351	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Selenium	0.263	U	0.263	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silicon	223		1.75	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silver	0.175	U	0.175	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Sodium	9.89	B	43.9	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Vanadium	1.37	B	2.19	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Zinc	3.08	B	8.77	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Mercury	0.0243	U	0.0243	mg/kg dry	1	L011276	11/18/2010	11/19/2010	7471A



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:08

J1B4T1
1011106-02 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Metals by SW846 6000/7000 series

Aluminum	9310		4.17	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Antimony	0.336	B	0.500	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Arsenic	2.49		0.833	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Barium	69.6		0.417	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Beryllium	0.282		0.167	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Boron	1.63	B	1.67	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cadmium	0.139	B	0.167	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Calcium	2720		83.3	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Chromium	12.2		0.167	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cobalt	6.08		1.67	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Copper	11.4		0.833	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Iron	20500		16.7	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Lead	5.46		0.417	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Magnesium	3380		62.5	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Manganese	293		4.17	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Molybdenum	0.353	B	1.67	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Nickel	9.58		3.33	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Potassium	1680		333	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Selenium	0.360		0.250	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silicon	603		1.67	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silver	0.167	U	0.167	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Sodium	191		41.7	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Vanadium	50.1		2.08	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Zinc	49.0		8.33	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Mercury	0.0245	U	0.0245	mg/kg dry	1	L011276	11/18/2010	11/19/2010	7471A



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 09:08

J1B4T2
1011106-03 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Metals by SW846 6000/7000 series

Aluminum	8240		4.33	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Antimony	0.608		0.520	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Arsenic	2.86		0.866	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Barium	62.5		0.433	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Beryllium	0.273		0.173	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Boron	1.89		1.73	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cadmium	0.272		0.173	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Calcium	2700		86.6	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Chromium	12.4		0.173	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cobalt	4.39		1.73	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Copper	44.5		0.866	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Iron	18500		17.3	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Lead	23.3		0.433	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Magnesium	3040		65.0	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Manganese	199		4.33	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Molybdenum	0.436	B	1.73	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Nickel	9.01		3.46	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Potassium	1620		346	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Selenium	0.334		0.260	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silicon	546		1.73	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silver	0.173	U	0.173	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Sodium	187		43.3	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Vanadium	41.4		2.17	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Zinc	115		8.66	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Mercury	0.0271	U	0.0271	mg/kg dry	1	L011276	11/18/2010	11/19/2010	7471A



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:08

J1B4T3
1011106-04 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Metals by SW846 6000/7000 series

Aluminum	8710		4.05	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Antimony	0.486	U	0.486	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Arsenic	2.72		0.810	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Barium	71.9		0.405	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Beryllium	0.281		0.162	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Boron	1.93		1.62	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cadmium	0.167		0.162	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Calcium	3290		81.0	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Chromium	10.9		0.162	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cobalt	6.00		1.62	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Copper	12.5		0.810	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Iron	20500		16.2	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Lead	58.2		0.405	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Magnesium	3120		60.7	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Manganese	325		4.05	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Molybdenum	0.381	B	1.62	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Nickel	8.74		3.24	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Potassium	1730		324	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Selenium	0.419		0.243	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silicon	566		1.62	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silver	0.162	U	0.162	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Sodium	218		40.5	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Vanadium	52.6		2.02	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Zinc	44.8		8.10	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Mercury	0.0314	U	0.0314	mg/kg dry	1	L011276	11/18/2010	11/19/2010	7471A



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 09:08

JIB4T4
1011106-05 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Metals by SW846 6000/7000 series

Aluminum	8910		4.59	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Antimony	0.551	U	0.551	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Arsenic	2.56		0.918	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Barium	67.0		0.459	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Beryllium	0.286		0.184	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Boron	1.89		1.84	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cadmium	0.135	B	0.184	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Calcium	3000		91.8	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Chromium	11.8		0.184	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cobalt	6.11		1.84	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Copper	14.5		0.918	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Iron	20000		18.4	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Lead	6.74		0.459	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Magnesium	3300		68.9	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Manganese	319		4.59	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Molybdenum	0.676	B	1.84	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Nickel	9.55		3.67	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Potassium	1880		367	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Selenium	0.324		0.276	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silicon	568		1.84	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silver	0.184	U	0.184	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Sodium	203		45.9	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Vanadium	46.3		2.30	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Zinc	41.4		9.18	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Mercury	0.0250	U	0.0250	mg/kg dry	1	L011276	11/18/2010	11/19/2010	7471A



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:08

J1B4T5
1011106-06 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Metals by SW846 6000/7000 series

Aluminum	7920		3.49	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Antimony	0.238	B	0.419	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Arsenic	2.17		0.698	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Barium	59.7		0.349	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Beryllium	0.242		0.140	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Boron	1.46		1.40	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cadmium	0.117	B	0.140	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Calcium	2350		69.8	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Chromium	10.1		0.140	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Cobalt	5.11		1.40	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Copper	10.1		0.698	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Iron	17000		14.0	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Lead	4.78		0.349	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Magnesium	2760		52.3	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Manganese	247		3.49	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Molybdenum	0.280	B	1.40	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Nickel	7.96		2.79	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Potassium	1430		279	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Selenium	0.327		0.209	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silicon	466		1.40	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Silver	0.140	U	0.140	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Sodium	193		34.9	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Vanadium	41.5		1.74	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Zinc	44.1		6.98	mg/kg dry	1	L011234	11/15/2010	11/19/2010	6010B
Mercury	0.0251	U	0.0251	mg/kg dry	1	L011276	11/18/2010	11/19/2010	7471A



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:08

Metals by SW846 6000/7000 series - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	-----------------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

Batch L011234 - SW 3050B

Blank (L011234-BLK3)

Prepared: 11/15/2010 Analyzed: 11/17/2010

Aluminum	3.73 U	3.73	mg/kg wet						
Antimony	0.448 U	0.448	mg/kg wet						
Arsenic	0.746 U	0.746	mg/kg wet						
Barium	0.373 U	0.373	mg/kg wet						
Beryllium	0.149 U	0.149	mg/kg wet						
Boron	1.49 U	1.49	mg/kg wet						
Cadmium	0.149 U	0.149	mg/kg wet						
Calcium	4.56 B	74.6	mg/kg wet						
Chromium	0.149 U	0.149	mg/kg wet						
Cobalt	1.49 U	1.49	mg/kg wet						
Copper	0.746 U	0.746	mg/kg wet						
Iron	14.9 U	14.9	mg/kg wet						
Lead	0.373 U	0.373	mg/kg wet						
Magnesium	2.29 B	56.0	mg/kg wet						
Manganese	3.73 U	3.73	mg/kg wet						
Molybdenum	1.49 U	1.49	mg/kg wet						
Nickel	2.99 U	2.99	mg/kg wet						
Potassium	299 U	299	mg/kg wet						
Selenium	0.274 U	0.224	mg/kg wet						
Silicon	1.49 U	1.49	mg/kg wet						
Silver	0.149 U	0.149	mg/kg wet						
Sodium	37.3 U	37.3	mg/kg wet						
Vanadium	1.87 U	1.87	mg/kg wet						
Zinc	7.46 U	7.46	mg/kg wet						

Duplicate (L011234-DUP3)

Source: 1011106-02

Prepared: 11/15/2010 Analyzed: 11/19/2010

Aluminum	9420	4.30	mg/kg dry		9310		1	20
Antimony	0.517 U	0.517	mg/kg dry		0.336			20
Arsenic	2.68	0.861	mg/kg dry		2.49		7	20
Barium	76.8	0.430	mg/kg dry		69.6		10	20
Beryllium	0.322	0.172	mg/kg dry		0.282		13	20
Boron	1.57 B	1.72	mg/kg dry		1.63		3	20
Cadmium	0.144 B	0.172	mg/kg dry		0.139		4	20
Calcium	2880	86.1	mg/kg dry		2720		6	20
Chromium	12.2	0.172	mg/kg dry		12.2		0.05	20
Cobalt	6.41	1.72	mg/kg dry		6.08		5	20
Copper	11.7	0.861	mg/kg dry		11.4		3	20



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:08

Metals by SW846 6000/7000 series - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	-----------------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

Batch L011234 - SW 3050B

Duplicate (L011234-DUP3)		Source: 1011106-02		Prepared: 11/15/2010 Analyzed: 11/19/2010	
Iron	22400	17.2	mg/kg dry	20500	9 20
Lead	5.61	0.430	mg/kg dry	5.46	3 20
Magnesium	3410	64.6	mg/kg dry	3380	0.7 20
Manganese	323	4.30	mg/kg dry	293	10 20
Molybdenum	0.365 B	1.72	mg/kg dry	0.353	3 20
Nickel	9.28	3.44	mg/kg dry	9.58	3 20
Potassium	1670	344	mg/kg dry	1680	0.8 20
Selenium	0.346	0.258	mg/kg dry	0.360	4 20
Silicon	621	1.72	mg/kg dry	603	3 20
Silver	0.172 U	0.172	mg/kg dry	0.167 U	20
Sodium	191	43.0	mg/kg dry	191	0.5 20
Vanadium	57.3	2.15	mg/kg dry	50.1	13 20
Zinc	51.9	8.61	mg/kg dry	49.0	6 20

Matrix Spike (L011234-MS3)		Source: 1011106-02		Prepared: 11/15/2010 Analyzed: 11/19/2010	
Aluminum	10600	5.06	mg/kg dry	202.59 9310	641* 75-125
Antimony	16.2	0.608	mg/kg dry	50.646 0.336	31* 75-125
Arsenic	175	1.01	mg/kg dry	202.59 2.49	85 75-125
Barium	247	0.506	mg/kg dry	202.59 69.6	88 75-125
Beryllium	4.67	0.203	mg/kg dry	5.0646 0.282	87 75-125
Boron	82.5	2.03	mg/kg dry	101.29 1.63	80 75-125
Cadmium	4.82	0.203	mg/kg dry	5.0646 0.139	92 75-125
Calcium	5490	101	mg/kg dry	2532.3 2720	110 75-125
Chromium	29.2	0.203	mg/kg dry	20.259 12.2	84 75-125
Cobalt	48.4	2.03	mg/kg dry	50.646 6.08	84 75-125
Copper	32.9	1.01	mg/kg dry	25.323 11.4	85 75-125
Iron	22300	20.3	mg/kg dry	101.29 20500	1810* 75-125
Lead	47.2	0.506	mg/kg dry	50.646 5.46	82 75-125
Magnesium	5660	76.0	mg/kg dry	2532.3 3380	90 75-125
Manganese	355	5.06	mg/kg dry	50.646 293	123 75-125
Molybdenum	86.0	2.03	mg/kg dry	101.29 0.353	85 75-125
Nickel	51.5	4.05	mg/kg dry	50.646 9.58	83 75-125
Potassium	3910	405	mg/kg dry	2532.3 1680	88 75-125
Selenium	166	0.304	mg/kg dry	202.59 0.360	82 75-125
Silicon	811	2.03	mg/kg dry	101.29 603	205* 75-125
Silver	4.19	0.203	mg/kg dry	5.0646 0.167 U	83 75-125
Sodium	2550	50.6	mg/kg dry	2532.3 191	93 75-125



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 09:08

Metals by SW846 6000/7000 series - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	-----------------------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

Batch L011234 - SW 3050B

Matrix Spike (L011234-MS3)	Source: 1011106-02	Prepared: 11/15/2010	Analyzed: 11/19/2010
Vanadium	98.6	2.53	mg/kg dry 50.646 50.1 96 75-125
Zinc	101	10.1	mg/kg dry 50.646 49.0 102 75-125

Reference (L011234-SRM3)	Prepared: 11/15/2010	Analyzed: 11/17/2010
Aluminum	8300	51.7 mg/kg wet 6766.6 123 0-225.5
Antimony	52.4	2.59 mg/kg wet 56.630 92 0-225.6
Arsenic	117	2.59 mg/kg wet 113.85 103 85-115
Barium	297	1.29 mg/kg wet 298.35 99 75.7-124.3
Beryllium	109	0.517 mg/kg wet 108.32 100 85.2-114.8
Boron	85.5	5.17 mg/kg wet 86.580 99 68.5-131.6
Cadmium	234	0.647 mg/kg wet 224.09 104 84.9-115.1
Calcium	3290	51.7 mg/kg wet 3305.9 100 82.8-117.2
Chromium	82.4	2.59 mg/kg wet 77.590 106 76.8-123.2
Cobalt	171	7.76 mg/kg wet 163.19 105 79.4-120.6
Copper	269	5.17 mg/kg wet 265.65 101 82.4-117.6
Iron	8360	51.7 mg/kg wet 8202.8 102 78.9-121.1
Lead	191	2.59 mg/kg wet 187.62 102 81.5-118.5
Magnesium	8100	12.9 mg/kg wet 8352.3 97 84.2-115.8
Manganese	925	2.59 mg/kg wet 951.35 97 69-131
Molybdenum	254	2.59 mg/kg wet 234.78 108 80.1-119.9
Nickel	233	6.47 mg/kg wet 220.85 105 81.4-118.6
Potassium	14700	259 mg/kg wet 14177 104 85.7-114.3
Selenium	188	2.59 mg/kg wet 187.99 100 78.8-121.2
Silicon	784	15.5 mg/kg wet 939.78 83 0-272.3
Silver	85.8	2.59 mg/kg wet 83.960 102 81.9-118.1
Sodium	9480	129 mg/kg wet 9587.1 99 83.5-116.4
Vanadium	108	2.59 mg/kg wet 97.430 111 75.8-124.2
Zinc	199	7.76 mg/kg wet 196.52 101 78.9-121.1



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 09:08

Metals by SW846 6000/7000 series - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L011276 - SW 7471A Prep									
Blank (L011276-BLK1)				Prepared: 11/18/2010 Analyzed: 11/19/2010					
Mercury	0.0290 U	0.0290	mg/kg wet						
Duplicate (L011276-DUP5)				Source: 1011106-02 Prepared: 11/18/2010 Analyzed: 11/19/2010					
Mercury	0.0258 U	0.0258	mg/kg dry		0.0245 U				20
Matrix Spike (L011276-MS5)				Source: 1011106-02 Prepared: 11/18/2010 Analyzed: 11/19/2010					
Mercury	0.156	0.0258	mg/kg dry	0.14350	0.0245 U	109	75-125		
Reference (L011276-SRM1)				Prepared: 11/18/2010 Analyzed: 11/19/2010					
Mercury	1.25	0.0265	mg/kg wet	1.2600		98.9	65.9-133.3		

Cont'd on p. 36
5/27/11/11/11

SAMPLE DIGESTION RECORD

Digestion Batch #: L011234
 Date/Time Initiated: 11/16/10 1105
 Date/Time Completed: 11/16/10 1615
 Analyst: JS
 Matrix (circle one): (Soil) Water Other
 Method (circle one): 3005A 3010A (3050) 200.7 (1994)

Digested / Undigested (circle one)
 Balance #: B1
 Balance Cal Verification: Y NA
 Temp: 98
 BLOCK 1 (2) (circle one)

NOTE: All temperatures are recorded as corrected temperatures

Work Order #	Spike Vol (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/Sol/TC	Texture	Color / Appearance	Artifact	Turb
1010081-01		0.59	50		TO	Fine	grey		N/A
L011234-Dup1		0.72	50						
-MS1	0.5	0.79	50						
1010081-02		0.59	50						
03		0.60	50						
04		0.68	50						
101104-01		0.80	50			Fine	Brown		
L011234-Dup2		0.57	50						
-MS2	0.5	0.51	50						
101104-02		0.54	50			Fine	Brown		
03		0.79	50			Fine	Brown	Rocks	
04		0.77	50			Fine	Brown		
1011106-01		0.57	50			Coarse	off white sand		
02		0.62	50			Fine	Brown		
L011234-Dup3		0.60	50						
-MS3	0.5	0.51	50						
101106 03		0.66	50			Fine	Brown	Rocks	
04		0.71	50			Fine	Black	Rocks	
05		0.54	50			Fine	Brown	Rocks	
06		0.74	50			Fine	Brown		
101108-01		0.61	50			Sludge	Black	H ₂ O	
L011234-Dup4		0.52	50						
-MS4	0.5	0.66	50						
101108 02		0.63	50			Sludge	Black	H ₂ O	
101104-Dup5		0.64	50			Fine	Grey		
L011234-Dup5		0.65	50						
-MS5	0.5	0.59	50						

Spiking IDs / Expiration Date:

MS#: 8100-04-46
 1-17
 1-18
 6077-087-14
 LCS#: 1001320

Reagent IDs:

HNO₃ J78034
 HCl J38042
 H₂O₂ H28000
 1:1 HNO₃ 63700803
 1:1 HCl

File ID#: _____

Data Review By / Date:

ajm 11/18/10

R:\group\QA\SOP

Signed\SPM\Metals Digestion log.doc

Page #:

Cont'd from p. 35

SAMPLE DIGESTION RECORD

Digestion Batch #: L011234
Date/Time Initiated: See p. 35
Date/Time Completed: See p. 35
Analyst: JJS
Matrix (circle): Soil Water Other
Method (circle one): 3005A 3010A 3050 200.7 (1994)

Digested/ Undigested (circle one)
Balance #: B14
Balance Cal Verification: Y NA
Temp: 98
BLOCK 1 2 (circle one)

NOTE: All temperatures are recorded as corrected temperatures

Work Order #	Spike Vol (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/Sol/TC	Texture	Color / Appearance	Artifact	Turb
L011234-11/10		0.67	50		TO	Coarse	Boilily chips	N/A	N/A
-5m	0.58	50			I	Fine	Dusty particles	I	I

JJS
11/16/10

Spiking IDs / Expiration Date:

MS#: See p. 36
LCS#: See p. 36

Reagent IDs:

HNO₃
HCl
H₂O₂ See p. 36
1:1 HNO₃
1:1 HCl

File ID#:

Data Review By / Date:

alm 11/16/10

PREPARATION BENCH SHEET

L011234

Lionville Laboratory

Printed: 11/19/2010 7:40:36AM

Matrix: Solid

Prepared using: METALS - SW 3050B

(No Surrogate)

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1010081-01	6010B As	11/15/2010 15:44	0.59	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1010081-01	6010B ICP Metals	11/15/2010 15:44	0.59	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1010081-01	6010B ICP Trace	11/15/2010 15:44	0.59	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1010081-01	6010B RCRA ICP METALS	11/15/2010 15:44	0.59	50					WC-Hanford, Inc.	
1010081-02	6010B RCRA ICP METALS	11/15/2010 15:44	0.59	50					WC-Hanford, Inc.	
1010081-03	6010B RCRA ICP METALS	11/15/2010 15:44	0.6	50					WC-Hanford, Inc.	
1010081-04	6010B RCRA ICP METALS	11/15/2010 15:44	0.68	50					WC-Hanford, Inc.	
1011104-01	6010B As	11/15/2010 15:44	0.8	50					INL	
1011104-01	6010B ICP Metals	11/15/2010 15:44	0.8	50					INL	Added for BatchQC in: L011234
1011104-01	6010B ICP Trace	11/15/2010 15:44	0.8	50					INL	Added for BatchQC in: L011234
1011104-01	6010B RCRA ICP METALS	11/15/2010 15:44	0.8	50					INL	Added for BatchQC in: L011234
1011104-02	6010B As	11/15/2010 15:44	0.54	50					INL	
1011104-03	6010B As	11/15/2010 15:44	0.79	50					INL	
1011104-04	6010B As	11/15/2010 15:44	0.77	50					INL	
1011106-01	6010B ICP Metals	11/15/2010 15:44	0.57	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1011106-02	6010B As	11/15/2010 15:44	0.62	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1011106-02	6010B ICP Metals	11/15/2010 15:44	0.62	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1011106-02	6010B ICP Trace	11/15/2010 15:44	0.62	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1011106-02	6010B RCRA ICP METALS	11/15/2010 15:44	0.62	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1011106-03	6010B ICP Metals	11/15/2010 15:44	0.66	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)

Extracts Relinquished By _____ Date _____

Extracts Received By _____ Date _____

PREPARATION BENCH SHEET

L011234

Lionville Laboratory

Printed: 11/19/2010 7:40:36AM

Matrix: Solid

Prepared using: METALS - SW 3050B

(No Surrogate)

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1011106-04	6010B ICP Metals	11/15/2010 15:44	0.71	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1011106-05	6010B ICP Metals	11/15/2010 15:44	0.56	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1011106-06	6010B ICP Metals	11/15/2010 15:44	0.74	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1011108-01	6010B As	11/15/2010 15:44	0.61	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1011108-01	6010B ICP Metals	11/15/2010 15:44	0.61	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1011108-01	6010B ICP Trace	11/15/2010 15:44	0.61	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1011108-01	6010B RCRA ICP METALS	11/15/2010 15:44	0.61	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1011108-02	6010B ICP Trace	11/15/2010 15:44	0.63	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1011109-01	6010B As	11/15/2010 15:44	0.64	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1011109-01	6010B ICP Metals	11/15/2010 15:44	0.64	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
1011109-01	6010B ICP Trace	11/15/2010 15:44	0.64	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1011109-01	6010B RCRA ICP METALS	11/15/2010 15:44	0.64	50					WC-Hanford, Inc.	Added for BatchQC in: L011234
L011234-BLK1	QC	11/15/2010 15:44	0.67	50						
L011234-BLK2	QC	11/15/2010 15:44	0.67	50						added due to diff. detection limits 1011104
L011234-BLK3	QC	11/15/2010 15:44	0.67	50						added due to diff. detection limits 1011106
L011234-BLK4	QC	11/15/2010 15:44	0.67	50						added due to diff. detection limits 1011108
L011234-BLK5	QC	11/15/2010 15:44	0.67	50						added due to diff. detection limits 1011109
L011234-DUP1	QC	11/15/2010 15:44	0.72	50		1010081-01				
L011234-DUP2	QC	11/15/2010 15:44	0.57	50		1011104-01				
L011234-DUP3	QC	11/15/2010 15:44	0.6	50		1011106-02				

Extracts Relinquished By _____ Date _____

Extracts Received By _____ Date _____

PREPARATION BENCH SHEET

L011234

Lionville Laboratory

Printed: 11/19/2010 7:40:36AM

Matrix: Solid

Prepared using: METALS - SW 3050B

(No Surrogate)

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
L011234-DUP4	QC	11/15/2010 15:44	0.52	50		1011108-01				
L011234-DUP5	QC	11/15/2010 15:44	0.65	50		1011109-01				
L011234-MS1	QC	11/15/2010 15:44	0.79	50	1001843	1010081-01	500			
L011234-MS2	QC	11/15/2010 15:44	0.51	50	1001843	1011104-01	500			
L011234-MS3	QC	11/15/2010 15:44	0.51	50	1001843	1011106-02	500			
L011234-MS4	QC	11/15/2010 15:44	0.66	50	1001843	1011108-01	500			
L011234-MS5	QC	11/15/2010 15:44	0.59	50	1001843	1011109-01	500			
L011234-SRM1	QC	11/15/2010 15:44	0.58	50	1001320		580			
L011234-SRM2	QC	11/15/2010 15:44	0.58	50	1001320		580			added due to diff. detection limits 1011104
L011234-SRM3	QC	11/15/2010 15:44	0.58	50	1001320		580			added due to diff. detection limits 1011106
L011234-SRM4	QC	11/15/2010 15:44	0.58	50	1001320		580			added due to diff. detection limits 1011108
L011234-SRM5	QC	11/15/2010 15:44	0.58	50	1001320		580			added due to diff. detection limits 1011109

Extracts Relinquished By _____ Date _____

Extracts Received By _____ Date _____

Analyst: M. Miller
 Date: 11/18/10
 Start Time/Temp: 2200/95°
 End Time/Temp: 2230/96°

Instrument ID: H6307
 Balance #: 629 /NA
 Pipette Calibration (Daily) Y

Logbook # 844
 Prep Batch: L011276
 Worksheet: H6-11901
 SOP No. ME-HgCVAA
 BLOCK (1) 2 (circle one)

NOTE: All temperatures are recorded as corrected temperatures.

Lvl Work Order#	pH < 2 (Liq)	Spike Vol (mL)	Spike Conc. (µg/L)	Initial Wt. or Vol (g or mL)	Final Sample Vol (mL)	Comments, % Solids, etc.
Blank				10ml	50	
0.2 µg/L		0.100		10ml	50	
1.0 µg/L		0.500		10ml	50	
2.0 µg/L		1.000		10ml	50	
5.0 µg/L		2.500		10ml	50	
10.0 µg/L		5.000		10ml	50	
JEN		0.125	2.5	10ml	50	
CEV		0.250	5.0	10ml	50	
JCB/CEB				10ml	50	
L011276-BLK1				0.31	50	
SRM1				0.34	50	
1011036-01				0.36	50	
L011276-DUP1				0.34	50	
MS1		0.500	1.0	0.36	50	
1011036-02				0.37	50	
1011039-01				0.39	50	
02				0.37	50	
L011276-DUP2				0.37	50	
MS2		0.500	1.0	0.35	50	
1011039-03				0.38	50	
1011090-01				0.34	50	
L011276-DUP3				0.34	50	
MS3		0.500	1.0	0.36	50	
1011090-02				0.35	50	
03				0.39	50	
1011093-01				0.32	50	
L011276-DUP4				0.38	50	

Standard:	ID	Prep Date/Time
ICAL/MS	0901995B AI	11/18/10 1620
ICV/CCV/LCS	0902297A I.V.	

Reviewed By/Date: AM 11/22/10

see book # 9368 for std traceability information

Soil LCS True Value = 1.26 mg/Kg
 Standard # 1001320

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
 after LCS Spiking Concentration: 1.0 µg/ml

Custody Transfer Record/Lab Work Request



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

1011106

Client <u>W.C. Hanford SAK# RC-174</u>	Refrigerator #	A	B	C	D					
Est. Final Proj. Sampling Date _____	#/Type Container	1	1	1	1					
Project# _____	Liquid									
Project Contact/Phone# _____	Solid	1A	1AG	1AG	1AG	1AG				
Lionville Laboratory Project Manager <u>O. JOHNSON</u>	Volume	120	120	120	125					
QC <u>SW</u> Del <u>STA</u> TAT <u>15 day 5</u>	Preservatives									

Date Rec'd <u>11-12-10</u>	Date Due <u>11-27-10</u>	ANALYSES REQUESTED
		ORGANIC: VOA, BNA, PCB, Herb, PAHs, TPH-D
		INORG: Metal, Hex, Chromium

MATRIX CODES: S- Soil SE- Sediment SO- Solid SL- Sludge W- Water O- Oil A- Air DS- Drum Solids DL- Drum Liquids L- EP/TCLP Leachate WI- Wipe X- Other F- Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
			MS	MSD				8082	830	ARO	Mex	CR6								
			01	J1B4T0						Soil	11-10-10	0800								
02		1					0805	X	X	X	X	X	X	X	X	X	X	X	X	X
03		2					0830	X	X	X	X	X	X	X	X	X	X	X	X	X
04		3					0900	X	X	X	X	X	X	X	X	X	X	X	X	X
05		4					0930	X	X	X	X	X	X	X	X	X	X	X	X	X
06		5				11-12-10	0805	X	X	X	X	X	X	X	X	X	X	X	X	X

Special Instructions: Run matrix QC

Special Instructions:

- _____
- _____
- _____
- _____
- _____
- _____

Relinquished by	Received by	Date	Time
<u>Fed Ep</u>	<u>W.C. Hanford</u>	<u>11/2/10</u>	<u>1020</u>

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL			
REWRITTEN			

10/11/06

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-174-008		Page 1 of 2						
Collector <i>WT Severson</i>		Company Contact Joan Kessner		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <i>8G</i> <i>C</i> <i>JE 11-10-10</i>		Data Turnaround 15 Days					
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr		Sampling Location 100-K-86 <i>Surface Samples</i>			SAF No. RC-174										
Ice Chest No. <i>AFS-04-036</i>		Field Logbook No. EL-1649		COA S10K86A000		Method of Shipment Fed Ex									
Shipped To EBERLINE SERVICES <i>LIONVILLE</i>		Offsite Property No. <i>A100614</i>			Bill of Lading/Air Bill No. See OSPC										
POSSIBLE SAMPLE HAZARDS/REMARKS <i>None JAD 11/10/10</i> Special Handling and/or Storage <i>Cool 4C JAD 11/10/10</i>				D None		C Cool 4C		B Cool 4C		A Cool 4C		None Cool 4C			
				Preservation		aG		aG		aG		P		aG	
				Type of Container		1		1		1		1		1	
				No. of Container(s)		125mL		120mL		60mL		120mL		120mL	
SAMPLE ANALYSIS				See item (1) in Special Instructions.		TPH-Diesel Range - WTPH-D +		VOA - 8260A (TCL)		PAHs - 8310		PCBs - 8082		See item (2) in Special Instructions. <i>hexavalent Chromium - 7196</i>	
Sample No.		Matrix *		Sample Date		Sample Time									
J1B4T0		SOIL		11/10/10		0800		✓		✓				EB	
J1B4T1		SOIL		11/10/10		0805		✓		✓		✓		SS 1	
J1B4T2		SOIL		11/10/10		0830		✓		✓		✓		SS 2	
J1B4T3		SOIL		11/10/10		0900		✓		✓		✓		SS 3	
J1B4T4		SOIL		11/10/10		0930		✓		✓		✓		SS 4	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <i>Whitney Severson</i>		Date/Time 1040 <i>11/10/10</i>		Received By/Stored In <i>J. DeBouque</i>		Date/Time 1040 <i>11/10/10</i>		(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury) (2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gross Alpha & Gross Beta <i>Use material from ICP Metals for Chromium Hex. JAD 6/2/10</i>				S=Soil SE=Settlement SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From <i>J.R. Edwards</i>		Date/Time 1100 <i>11/10/10</i>		Received By/Stored In <i>J.R. Edwards</i>		Date/Time 1100 <i>11/10/10</i>									
Relinquished By/Removed From <i>J.R. Edwards</i>		Date/Time 1200 <i>11/10/10</i>		Received By/Stored In <i>J.E. Beaulieu</i>		Date/Time 1200 <i>11-10-10</i>									
Relinquished By/Removed From <i>J.E. Beaulieu</i>		Date/Time 0915 <i>11-11-10</i>		Received By/Stored In <i>FED EX</i>		Date/Time									
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time 1020 <i>11-12-10</i>		Received By/Stored In <i>VICTOR HERNANDEZ</i>		Date/Time 1020 <i>11-10-10</i>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By				Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time					



1011106

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-174-008	Page 2 of 2																															
Collector WT Sexsmith		Company Contact Joan Kessner		Telephone No. 375-4688		Project Coordinator KESSNER, JH																																	
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr		Sampling Location 100-K-86 Surface Samples		SAF No. RC-174		Price Code 88 JEB 11-10-10 Data Turnaround 15 Days																																	
Ice Chest No. AFS-04-036		Field Logbook No. EL-1649		COA S10K86A000		Method of Shipment Fed Ex																																	
Shipped To EBERLINE SERVICES / LIONVILLE		Offsite Property No. A100614		Bill of Lading/Air Bill No. See OSCP																																			
POSSIBLE SAMPLE HAZARDS/REMARKS None JSD 11/10/10				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Preservation</td> <td>None</td> <td>Cool 4C</td> <td>Cool 4C</td> <td>Cool 4C</td> <td>Cool 4C</td> <td>None</td> <td>Cool 4C</td> </tr> <tr> <td>Type of Container</td> <td>aG</td> <td>aG</td> <td>aG</td> <td>aG</td> <td>aG</td> <td>P</td> <td>aG</td> </tr> <tr> <td>No. of Container(s)</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <td>Volume</td> <td>125mL</td> <td>120mL</td> <td>60mL</td> <td>120mL</td> <td>120mL</td> <td>500mL</td> <td>125mL</td> </tr> </table>				Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	Cool 4C	Type of Container	aG	aG	aG	aG	aG	P	aG	No. of Container(s)	1	1	1	1	1	1	0	Volume	125mL	120mL	60mL	120mL	120mL	500mL	125mL
Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	Cool 4C																																
Type of Container	aG	aG	aG	aG	aG	P	aG																																
No. of Container(s)	1	1	1	1	1	1	0																																
Volume	125mL	120mL	60mL	120mL	120mL	500mL	125mL																																
Special Handling and/or Storage Cool 4C JSD 11/10/10																																							
SAMPLE ANALYSIS				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>See item (1) in Special Instructions.</td> <td>TPH-Diesel Range - WTPH-D +</td> <td>VOA - 8260A (TCL)</td> <td>PAHs - 8310</td> <td>PCBs - 8082</td> <td>See item (2) in Special Instructions.</td> <td>Chromium Hex - 7196</td> </tr> </table>				See item (1) in Special Instructions.	TPH-Diesel Range - WTPH-D +	VOA - 8260A (TCL)	PAHs - 8310	PCBs - 8082	See item (2) in Special Instructions.	Chromium Hex - 7196																									
See item (1) in Special Instructions.	TPH-Diesel Range - WTPH-D +	VOA - 8260A (TCL)	PAHs - 8310	PCBs - 8082	See item (2) in Special Instructions.	Chromium Hex - 7196																																	
Sample No.	Matrix *	Sample Date	Sample Time																																				
J1B4T5	SOIL	11/10/10	0805	✓	✓	✓	✓																																
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS																																			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time																																	
Whitney Sexsmith		11/10/10 1040		J. DeBuigne		11/10/10 1046																																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time																																	
J. DeBuigne		11/10/10 1100		J. R. Schaefer		11/10/10 1100																																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time																																	
J. R. Schaefer		11/10/10 1200		S. E. Beutel		11-10-10 1200																																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time																																	
J. E. Beutel		11-11-10 0915		FED EX		11-10-10																																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time																																	
Victor Hernandez		11-12-10 1020		Victor Hernandez		11-12-10 1020																																	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time																																	
LABORATORY SECTION				SPECIAL INSTRUCTIONS																																			
Received By		Title		(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury} (2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta Use material from ICP Metals for Chromium-Hex JSD 6/2/10				Matrix *																															
Disposal Method		Disposed By						Date/Time		Date/Time																													



Lionville Laboratory
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. Hanford
 Project/SAP/SOW/Release #: RC-174

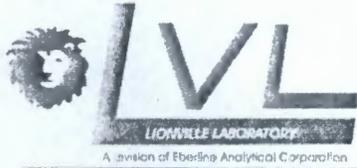
Date: 11/12/10

LvL Batch #: 1011106

Sample Custodian: Victor Newberry

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | |
|--|--|---|
| 1. Samples Hand Delivered or <u>Shipped?</u> | Carrier <u>Fed Ex</u> | Airbill # <u>7964 4077 6048</u> |
| 2. Custody Seals on coolers or shipping containers intact, signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Comments: |
| 4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5. Samples received cooled or ambient? | Temp <u>2.1</u> °C | Cooler # <u>AFS-04-036</u> |
| How was the temperature taken? | <input checked="" type="checkbox"/> IR <input type="checkbox"/> Temp. Blank | <input type="checkbox"/> Other (Specify): |
| Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 7. COC (Client & LvL) signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 9. All samples on COC received?
All samples received on COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 10. All sample label information matches COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 11. Samples properly preserved? (If #5 is no. then this is no.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 12. Samples received within hold times?
Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 16. Project Manager contacted concerning any discrepancies?
Person Contacted _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| | Date _____ | |



RECEIVED
2011

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 20:49

Analytical Report for Extractable Petroleum Hydrocarbons by SW846 8015

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1B4T1	1011106-02	Soil	11/10/2010 08:05	11/12/2010 10:20
J1B4T2	1011106-03	Soil	11/10/2010 08:30	11/12/2010 10:20
J1B4T3	1011106-04	Soil	11/10/2010 09:00	11/12/2010 10:20
J1B4T4	1011106-05	Soil	11/10/2010 09:30	11/12/2010 10:20
J1B4T5	1011106-06	Soil	11/10/2010 08:05	11/12/2010 10:20



264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-174 K2573
LVL #: 1011106

W.O. #: 60049-001-001-0001-00
Date Received: 11-12-2010

DIESEL RANGE ORGANICS

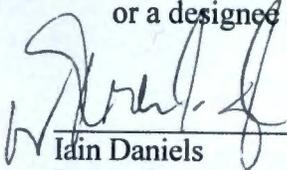
Five (5) soil samples were collected on 11-10-2010.

The samples and associated QC samples were extracted 11-17-2010 and analyzed 11-24-2010, 12-04-2010 according to criteria set forth in Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3540C and the analysis procedure was based on SW846 Method 8015B for Diesel Range Organics.

Lionville Laboratory (LvL) is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements:

1. The results presented in this report are derived from samples that met LvL's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. Five (5) of nine (9) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#10GC399) has been enclosed.
4. The method blank was below the reporting limits for all target compounds.
5. The blank spike recovery was within acceptance criteria.
6. Two (2) of two (2) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#10GC399) has been enclosed. Matrix spike recoveries were unobtainable due to dilution required for analysis. Sample J1B4T2 required a 10-fold instrument dilution.
7. Six (6) samples required instrument dilutions due to high concentrations of target analytes. Samples J1B4T1, J1B4T2, J1B4T5, L011265-MS2 and L011265-MSD2 required a 10-fold instrument dilution. Sample J1B4T4 required a 5-fold instrument dilution. Reporting limits have been adjusted to reflect the necessary dilutions.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria with the exception of low surrogate recovery in CCV. However, all samples ran after that CCV had good surrogate recoveries.
10. The samples were reported on a dry weight basis.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or a designee as verified by the following signature.



Iain Daniels
LvL Laboratory Manager

12/9/10

Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 1060399

Initiator: Catherine Carey Batch: 1011106 Parameter: DRO
 Date: 12/06/10 Samples: 03, 04, 05, ms2/ms02 Matrix: SOIL
 Client: WC Hanford Method: SW846/MCAWW/CLP/ Prep Batch: L011265

1. Reason for SDR

- a. COC Discrepancy Tech Profile Error Client Request Sampler Error on C-O-C
 Transcription Error Wrong Test Code Other _____
- b. General Discrepancy
 Missing Sample/Extract Container Broken Wrong Sample Pulled Label ID's Illegible
 Hold Time Exceeded Insufficient Sample Preservation Wrong Received Past Hold
 Improper Bottle Type Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

sample J1B4T1, J1B4T3, J1B4T4 + L011265 ms2/ms02 - surrogates
 outside QC limits
 spike recovers out on ms2/ms02

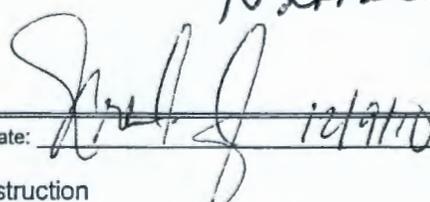
2. Known or Probable Causes(s)

elevated final volumes + dilutions
 Plus interference from non target compounds on surrogates.

3. Discussion and Proposed Action

Other Description:

- Re-log
- Entire Batch
- Following Samples: _____
- Re-leach
- Re-extract
- Re-digest
- Revise EDD
- Change Test Code to _____
- Place On/Take Off Hold (circle)

Narrate ID.


4. Project Manager Instructions...signature/date:

- Concur with Proposed Action
- Disagree with Proposed Action; See Instruction
- Include in Case Narrative
- Client Contacted:
- Date/Person _____
- Add
- Cancel

5. Final Action...signature/date:

Other Explanation:

- Verified re-[log][leach][extract][digest][analysis] (circle)
- Included in Case Narrative
- Hard Copy COC Revised
- Electronic COC Revised
- EDD Corrections Completed

When Final Action has been recorded, forward original to QA for disposition.

Route

- Lab Manager: Daniels
- Project Mgr (circle): Johnson / Stone
- Sample Prep (circle): Ford
- Log-in: King

Route

- Metals: Welsh /
- Inorganic: Perrone /
- GC/LC: Carey /
- MS VOA: Rubino /
- MS BNA: Carden /
- Other: _____



GLOSSARY OF DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.
- .I = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.
- P = This flag is used for a dual column analysis (i.e. pesticides/PCB/herbicides) when there is greater than 40% difference for detected concentrations between the two GC columns; the lower of the two values is reported on Form 1 and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- NS = Not Spiked.
- SP = Indicates Spiked Compound.
- NPM = No pattern match for multi-component target analytes.



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 20:49

Extractable Petroleum Hydrocarbons by SW846 8015
Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
J1B4T1 (1011106-02) Soil								
Surrogate: <i>p</i> -Terphenyl	178 % *	39-129			L011265	11/17/2010	12/04/2010	8015M
Diesel Range Organics	140000 U	140000	ug/kg dry	10	L011265	11/17/2010	12/04/2010	8015M
Motor Oil	8330000	420000	ug/kg dry	10	L011265	11/17/2010	12/04/2010	8015M
J1B4T2 (1011106-03) Soil								
Surrogate: <i>p</i> -Terphenyl	66 %	39-129			L011265	11/17/2010	12/04/2010	8015M
Diesel Range Organics	77500 U	77500	ug/kg dry	10	L011265	11/17/2010	12/04/2010	8015M
Motor Oil	3470000	233000	ug/kg dry	10	L011265	11/17/2010	12/04/2010	8015M
J1B4T3 (1011106-04) Soil								
Surrogate: <i>p</i> -Terphenyl	3030 % *	39-129			L011265	11/17/2010	12/04/2010	8015M
Diesel Range Organics	146000 U	146000	ug/kg dry	1	L011265	11/17/2010	12/04/2010	8015M
Motor Oil	4810000	437000	ug/kg dry	1	L011265	11/17/2010	12/04/2010	8015M
J1B4T4 (1011106-05) Soil								
Surrogate: <i>p</i> -Terphenyl	150 % *	39-129			L011265	11/17/2010	12/04/2010	8015M
Diesel Range Organics	34500 U	34500	ug/kg dry	5	L011265	11/17/2010	12/04/2010	8015M
Motor Oil	1760000	103000	ug/kg dry	5	L011265	11/17/2010	12/04/2010	8015M
J1B4T5 (1011106-06) Soil								
Surrogate: <i>p</i> -Terphenyl	62 %	39-129			L011265	11/17/2010	12/04/2010	8015M
Diesel Range Organics	33700 U	33700	ug/kg dry	10	L011265	11/17/2010	12/04/2010	8015M
Motor Oil	2820000	101000	ug/kg dry	10	L011265	11/17/2010	12/04/2010	8015M



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 20:49

Extractable Petroleum Hydrocarbons by SW846 8015 - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L011265 - SW 3540C									
Blank (L011265-BLK1)				Prepared: 11/17/2010 Analyzed: 11/24/2010					
Diesel Range Organics	3330 U	3330	ug/kg wet						
Motor Oil	10000 U	10000	ug/kg wet						
Surrogate: <i>p</i> -Terphenyl	3250		ug/kg wet	6666.7		49	39-129		
LCS (L011265-BS1)				Prepared: 11/17/2010 Analyzed: 11/24/2010					
Diesel Range Organics	50500	3330	ug/kg wet	66667		76	42-133		
Surrogate: <i>p</i> -Terphenyl	4190		ug/kg wet	6666.7		63	39-129		
Matrix Spike (L011265-MS2)				Source: 1011106-02		Prepared: 11/17/2010 Analyzed: 12/04/2010			
Diesel Range Organics	4650000	137000	ug/kg dry	68696	140000 U6770*		42-133		
Surrogate: <i>p</i> -Terphenyl	15200		ug/kg dry	6869.6		222*	39-129		
Matrix Spike Dup (L011265-MSD2)				Source: 1011106-02		Prepared: 11/17/2010 Analyzed: 12/04/2010			
Diesel Range Organics	5010000	136000	ug/kg dry	67884	140000 U7390*		42-133	9	40
Surrogate: <i>p</i> -Terphenyl	15000		ug/kg dry	6788.4		221*	39-129		

PREPARATION BENCH SHEET

L011265

Lionville Laboratory

Printed: 11/18/2010 4:39:44PM

Matrix: Solid

Prepared using: GC - SW 3540C

Surrogate used: 1001900

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1011090-01	8015M DRO	11/17/2010 17:06	31.04	1				1000	WC-Hanford, Inc.	
1011090-02	8015M DRO	11/17/2010 17:06	29.87	1				1000	WC-Hanford, Inc.	
1011090-03	8015M DRO	11/17/2010 17:06	29.81	1				1000	WC-Hanford, Inc.	
1011106-02	8015M DRO	11/17/2010 17:06	29.5	4				1000	WC-Hanford, Inc.	
1011106-03	8015M DRO	11/17/2010 17:06	29.49	2				1000	WC-Hanford, Inc.	
1011106-04	8015M DRO	11/17/2010 17:06	31.6	40				1000	WC-Hanford, Inc.	
1011106-05	8015M DRO	11/17/2010 17:06	29.82	2				1000	WC-Hanford, Inc.	
1011106-06	8015M DRO	11/17/2010 17:06	30.61	1				1000	WC-Hanford, Inc.	
1011108-01	8015M DRO	11/17/2010 17:06	28.29	1				1000	WC-Hanford, Inc.	
1011108-02	8015M DRO	11/17/2010 17:06	30.1	1				1000	WC-Hanford, Inc.	
1011109-01	8015M DRO	11/17/2010 17:06	30.6	1				1000	WC-Hanford, Inc.	
L011265-BLK1	QC	11/17/2010 17:06	30	1				1000		
L011265-BS1	QC	11/17/2010 17:06	30	1	1001788		1000	1000		
L011265-MS1	QC	11/17/2010 17:06	29.71	1	1001788	1011090-02	1000	1000		
L011265-MS2	QC	11/17/2010 17:06	30.08	4	1001788	1011106-02	1000	1000		
L011265-MS3	QC	11/17/2010 17:06	29.74	1	1001788	1011108-01	1000	1000		
L011265-MS4	QC	11/17/2010 17:06	29.76	1	1001788	1011109-01	1000	1000		
L011265-MSD1	QC	11/17/2010 17:06	28.28	1	1001788	1011090-02	1000	1000		
L011265-MSD2	QC	11/17/2010 17:06	30.44	4	1001788	1011106-02	1000	1000		
L011265-MSD3	QC	11/17/2010 17:06	28.01	1	1001788	1011108-01	1000	1000		

AS
 Extracts Relinquished By _____ Date 11/18/10

UC
 Extracts Received By _____ Date 11-19-10

PREPARATION BENCH SHEET

L011265

Lionville Laboratory

Printed: 11/18/2010 4:39:44PM

Matrix: Solid

Prepared using: GC - SW 3540C

Surrogate used: 1001900

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
L011265-MSD4	QC	11/17/2010 17:06	28.15	1	1001788	1011109-01	1000	1000		

S. Lee 11/18/10
 Extracts Relinquished By _____ Date _____

UC 11-19-10
 Extracts Received By _____ Date _____



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

1011106

Client <u>W.C. Hanford SA# RC-174</u>	Refrigerator #	A	B	C	D				
Est. Final Proj. Sampling Date _____	#/Type Container	Liquid	1	1	1	1			
Project# _____		Solid	1AG	1AG	1AG	1AG			
Project Contact/Phone# _____	Volume		120	120	120	125			
Lionville Laboratory Project Manager <u>O. JOHNSON</u>	Preservatives		-	-	-				
QC <u>SW</u> Del <u>STA</u> TAT <u>15 days</u>	ANALYSES REQUESTED								
Date Rec'd <u>11-12-10</u> Date Due <u>11-27-10</u>		ORGANIC					INORG		
		VOA					Metal		
		BNA					Herb		
		PCB							
		Herb							
		PAHs							
		TPH							

MATRIX CODES: S- Soil SE- Sediment SO- Solid SL- Sludge W- Water O- Oil A- Air DS- Drum DL- Drum L- EP/TCLP Leachate WI- Wipe X- Other F- Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
			MS	MSD				8082	8310	ARO	MX	CR6								
			01	J1B4T0						Soil	11-10-10	0800								
02	I	1			I	I	0805	X	X	X	X	X	X	X	X	X	X	X	X	X
03	I	2			I	I	0830	X	X	X	X	X	X	X	X	X	X	X	X	X
04	I	3			I	I	0900	X	X	X	X	X	X	X	X	X	X	X	X	X
05	I	4			I	I	0930	X	X	X	X	X	X	X	X	X	X	X	X	X
06	I	5			I	I	11-12-10 0805	X	X	X	X	X	X	X	X	X	X	X	X	X

Special Instructions: Run matrix QC

- Special Instructions:
- _____
 - _____
 - _____
 - _____
 - _____
 - _____

Relinquished by	Received by	Date	Time
<u>Fed Ep</u>	<u>[Signature]</u>	<u>11/12/10</u>	<u>1020</u>

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

00000040

10/11/06

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-174-008	Page 1 of 2	
Collector <i>WT Seasmith</i>	Company Contact Joan Kessner	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code <i>86</i>	Data Turnaround 15 Days			
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr	Sampling Location 100-K-86 <i>Surface Samples</i>	SAF No. RC-174	Method of Shipment Fed Ex		JFA 11-10-10				
Ice Chest No. <i>AFS-04-036</i>	Field Logbook No. EL-1649	COA S10K86A000	Bill of Lading/Air Bill No. See OSPC						
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>	Offsite Property No. <i>A100614</i>								
POSSIBLE SAMPLE HAZARDS/REMARKS <i>None JPD 11/10/10</i> Special Handling and/or Storage <i>Cool 4C JPD 11/10/10</i>	Preservation	D None	C Cool 4C	Cool 4C	B Cool 4C	A Cool 4C	None	<i>Cool 4C</i>	
	Type of Container	aG	aG	aG	aG	aG	P	<i>aG</i>	
	No. of Container(s)	1	1	1	1	1	1	<i>0</i>	
	Volume	125mL	120mL	60mL	120mL	120mL	500mL	<i>125mL</i>	
SAMPLE ANALYSIS		See item (1) in Special Instructions.	TPH-Diesel Range - WTPH-D +	VOA - 8260A (TCL)	PAHs - 8310	PCBs - 8082	See item (2) in Special Instructions.	<i>hexavalent Chromium -7196</i>	
Sample No.	Matrix *	Sample Date	Sample Time						
J1B4T0	SOIL	11/10/10	0800	✓		✓		<i>EB</i>	
J1B4T1	SOIL	11/10/10	0805	✓	✓	✓	✓	<i>SS 1</i>	
J1B4T2	SOIL	11/10/10	0830	✓	✓	✓	✓	<i>SS 2</i>	
J1B4T3	SOIL	11/10/10	0900	✓	✓	✓	✓	<i>SS 3</i>	
J1B4T4	SOIL	11/10/10	0930	✓	✓	✓	✓	<i>SS 4</i>	
CHAIN OF POSSESSION		Sign/Print Names			SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <i>Whitney Seasmith</i>	Date/Time <i>1040</i>	Received By/Stored In <i>JR DeB...</i>	Date/Time <i>11/10/10</i>	Date/Time <i>1040</i>	(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) (Mercury) (2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta <i>Use material from ICP Metals for Chromium Hex.</i> <i>JPD 6/2/10</i>				S=Soil SE=Settiment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trane W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>JR DeB...</i>	Date/Time <i>1100</i>	Received By/Stored In <i>JR DeB...</i>	Date/Time <i>11/10/10</i>	Date/Time <i>1100</i>					
Relinquished By/Removed From <i>S.R. Brandon</i>	Date/Time <i>1200</i>	Received By/Stored In <i>J.E. Be...</i>	Date/Time <i>11/10/10</i>	Date/Time <i>1200</i>					
Relinquished By/Removed From <i>J.E. Be...</i>	Date/Time <i>0915</i>	Received By/Stored In <i>FED EX</i>	Date/Time <i>11-11-10</i>	Date/Time <i>11-10-10</i>					
Relinquished By/Removed From <i>FED EX</i>	Date/Time <i>11-12-10</i>	Received By/Stored In <i>VICTOR HERNANDEZ</i>	Date/Time <i>11/2-10</i>	Date/Time <i>1020</i>					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Date/Time					
LABORATORY SECTION	Received By	Title			Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By			Date/Time				



1011106

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-174-008		Page 2 of 2			
Collector WT Sexsmith		Company Contact Joan Kessner		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 88 C JEB 11-10-10		Data Turnaround 15 Days		
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr		Sampling Location 100-K-86 Surface Samples			SAF No. RC-174							
Ice Chest No. AFS-04-036		Field Logbook No. EL-1649		COA S10K86A000		Method of Shipment Fed Ex						
Shipped To EBERLINE SERVICES / <u>IONVILLE</u>		Offsite Property No. A100614			Bill of Lading/Air Bill No. See OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS None JSD 11/10/10 Special Handling and/or Storage Cool 4C JSD 11/10/10				Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	Cool 4C	
				Type of Container	aG	aG	aG	aG	aG	P	aG	
				No. of Container(s)	1	1	1	1	1	1	0	
				Volume	125mL	120mL	60mL	120mL	120mL	500mL	125mL	
SAMPLE ANALYSIS				See item (1) in Special Instructions.	TPH-Diesel Range - WTPH-D +	VOA - 8260A (TCL)	PAHs - 8310	PCBs - 8082	See item (2) in Special Instructions.	Chromium Hex - 7196		
Sample No.	Matrix *	Sample Date	Sample Time									
J1B4T5	SOIL	11/12/10	0805	✓	✓	✓	✓	✓	✓		D	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From Whitney Sexsmith 11/10/10		Date/Time 1040		Received By/Stored In J.P. DeBuigne 11/10/10		Date/Time 1040		(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury) (2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gross Alpha & Gross Beta USE material from ICP Metals for Chromium-Hex JSD 6/2/10				S=Soil SE=Settling SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From J.P. DeBuigne 11/10/10		Date/Time 1100		Received By/Stored In J.R. Sanderson 11/10/10		Date/Time 1100						
Relinquished By/Removed From J.R. Sanderson 11/10/10		Date/Time 1200		Received By/Stored In J.E. Beaulieu 11-10-10		Date/Time 1200						
Relinquished By/Removed From J.E. Beaulieu 11-11-10		Date/Time 0915		Received By/Stored In FED EX 11-12-10		Date/Time 1020						
Relinquished By/Removed From FED EX 11-12-10		Date/Time 1020		Received By/Stored In Victor Hernandez 11-12-10		Date/Time 1020						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By			Title			Date/Time					
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time					



Lionville Laboratory
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *Wc Hanford*
Project/SAE/SOW/Release #: *RC-174*

Date: *11/12/10*

LvL Batch #: *1011106*

Sample Custodian: *Tutor Newberry*

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | |
|--|---|---|
| 1. Samples Hand Delivered <u>or Shipped?</u> | Carrier <i>Fed Ex</i> | Airbill # <i>7964 4077 6048</i> |
| 2. Custody Seals on coolers or shipping containers intact, signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Comments: |
| 4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5. Samples received cooled or ambient? | Temp <i>2.1</i> °C | Cooler # <i>AFS-04-036</i> |
| How was the temperature taken? | <input checked="" type="checkbox"/> IR <input type="checkbox"/> Temp. Blank | <input type="checkbox"/> Other (Specify): |
| Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 7. COC (Client & LvL) signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 9. All samples on COC received? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| All samples received on COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 10. All sample label information matches COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 11. Samples properly preserved? (If #5 is no, then this is no.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 12. Samples received within hold times? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| Short holds taken to wet lab? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 16. Project Manager contacted concerning any discrepancies? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| Person Contacted _____ | Date _____ | |



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

RECEIVED
12/2/10

Reported:
12/07/2010 10:28

Analytical Report for Polynuclear Aromatic Compounds by SW846 8310

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1B4T0	1011106-01	Soil	11/10/2010 08:00	11/12/2010 10:20
J1B4T1	1011106-02	Soil	11/10/2010 08:05	11/12/2010 10:20
J1B4T2	1011106-03	Soil	11/10/2010 08:30	11/12/2010 10:20
J1B4T3	1011106-04	Soil	11/10/2010 09:00	11/12/2010 10:20
J1B4T4	1011106-05	Soil	11/10/2010 09:30	11/12/2010 10:20
J1B4T5	1011106-06	Soil	11/10/2010 08:05	11/12/2010 10:20



264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-174 K2573
LVL #: 1011106

W.O. #: 60049-001-001-0001-00
Date Received: 11-12-2010

POLYNUCLEAR AROMATIC HYDROCARBONS (PAH)

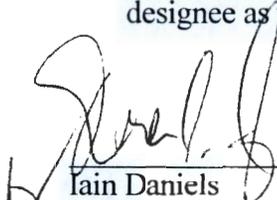
Six (6) soil samples were collected on 11-10-2010.

The samples and associated QC samples were extracted 11-18-2010 and analyzed 11-30-2010, 12-06-2010 according to criteria set forth in Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3540C and the analysis procedure was based on SW846 Method 8310.

Lionville Laboratory (LvL) is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements:

1. The results presented in this report are derived from samples that met LvL's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. Five (5) of ten (10) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#10GC400) has been enclosed.
4. The method blank was below the reporting limits for all target compounds.
5. All blank spike recoveries were within acceptance criteria.
6. Eleven (11) of thirty-two (32) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#10GC400) has been enclosed.
7. Seven (7) samples required instrument dilutions due to high concentrations of both target and non-target analytes. Samples J1B4T1 and J1B4T2 required a 10-fold instrument dilution. Sample J1B4T3 required a 100-fold instrument dilution. Sample J1B4T4 required a 25-fold instrument dilution. Samples J1B4T5, L011275-MS3 and L011275-MSD3 required a 10-fold instrument dilution. Reporting limits have been adjusted to reflect the necessary dilutions.
8. The initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. The samples were reported on a dry weight basis.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee as verified by the following signature.



Iain Daniels
LvL Laboratory Manager

12/9/10

Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 10GC400

Initiator: L. Kauffman
 Date: 12-7-2010
 Client: WC Hanford RE-174

Batch: 1011106
 Samples: 411
 Method: SW846/MCAWW/CLPI

Parameter: PAH
 Matrix: Soil
 Prep Batch: L011275

1. Reason for SDR

a. COC Discrepancy Tech Profile Error Client Request Sampler Error on C-O-C
 Transcription Error Wrong Test Code Other _____

b. General Discrepancy

Missing Sample/Extract Container Broken Wrong Sample Pulled Label ID's Illegible
 Hold Time Exceeded Insufficient Sample Preservation Wrong Received Past Hold
 Improper Bottle Type Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

- ① Five of ten surrogate recoveries were out of the acceptance range.
- ② 11 of 32 matrix spike recoveries were outside the acceptance range.

2. Known or Probable Causes(s)

Dilutions and sample matrix

3. Discussion and Proposed Action

Other Description:

- Re-log
- Entire Batch
- Following Samples: _____
- Re-leach
- Re-extract
- Re-digest
- Revise EDD
- Change Test Code to _____
- Place On/Take Off Hold (circle)

Narrative ID
[Signature]

4. Project Manager Instructions...signature/date:

- Concur with Proposed Action
- Disagree with Proposed Action; See Instruction
- Include in Case Narrative
- Client Contacted:
- Date/Person _____
- Add
- Cancel

5. Final Action...signature/date: JKS 12-09-10

Other Explanation:

- Verified re-[log][leach][extract][digest][analysis] (circle)
- Included in Case Narrative
- Hard Copy COC Revised
- Electronic COC Revised
- EDD Corrections Completed

When Final Action has been recorded, forward original to QA for disposition.

Route

- Lab Manager: Daniels
- Project Mgr (circle) Johnson / Stone
- Sample Prep (circle): Ferd
- Log-in: King

Route

- Metals: Welsh / _____
- Inorganic: Perrone / _____
- GC/LC: Carey / _____
- MS VOA: Rubino / _____
- MS BNA: Carden / _____
- Other: _____



GLOSSARY OF DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.
- .I = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.
- P = This flag is used for a dual column analysis (i.e. pesticides/PCB/herbicides) when there is greater than 40% difference for detected concentrations between the two GC columns; the lower of the two values is reported on Form 1 and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- NS = Not Spiked.
- SP = Indicates Spiked Compound.
- NPM = No pattern match for multi-component target analytes.



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/07/2010 10:28

J1B4T0
1011106-01 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polynuclear Aromatic Compounds by SW846 8310

Naphthalene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Acenaphthylene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Acenaphthene	1.11 J	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Fluorene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Phenanthrene	1.58 J	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Anthracene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Fluoranthene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Indeno[1,2,3-cd]pyrene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Pyrene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Benz[a]anthracene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Chrysene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Benzo[b] fluoranthene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Benzo[k] fluoranthene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Benzo[a] pyrene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Dibenz[a,h]anthracene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Benzo[g,h,i] perylene	3.17 U	3.17	ug/kg dry	1	L011275	11/18/2010	12/06/2010	8310
Surrogate: Triphenylene	103 %	68-129			L011275	11/18/2010	12/06/2010	8310



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/07/2010 10:28

J1B4T1
1011106-02 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polynuclear Aromatic Compounds by SW846 8310

Naphthalene	124 D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Acenaphthylene	79.7 D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Acenaphthene	258 D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Fluorene	33.4 U	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Phenanthrene	35.4 D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Anthracene	49.0 D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Fluoranthene	214 D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Indeno[1,2,3-cd]pyrene	34.1 D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Pyrene	33.4 U	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benz[a]anthracene	15.4 J, D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Chrysene	731 D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[b] fluoranthene	95.4 D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[k] fluoranthene	33.4 U	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[a] pyrene	33.4 U	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Dibenz[a,h]anthracene	33.4 U	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[g,h,i] perylene	9.19 J, D	33.4	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Surrogate: Triphenylene	341 % *	68-129			L011275	11/18/2010	12/06/2010	8310



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/07/2010 10:28

J1B4T2
1011106-03 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polynuclear Aromatic Compounds by SW846 8310

Naphthalene	11.0 J, D	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Acenaphthylene	57.0 D	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Acenaphthene	695 D	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Fluorene	36.5 U	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Phenanthrene	19.6 J, D	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Anthracene	36.5 U	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Fluoranthene	29.1 J, D	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Indeno[1,2,3-cd]pyrene	36.5 U	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Pyrene	58.3 D	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benz[a]anthracene	36.5 U	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Chrysene	54.6 D	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[b] fluoranthene	36.5 U	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[k] fluoranthene	36.5 U	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[a] pyrene	36.5 U	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Dibenz[a,h]anthracene	36.5 U	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[g,h,i] perylene	36.5 U	36.5	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Surrogate: Triphenylene	97 %	68-129			L011275	11/18/2010	12/06/2010	8310



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/07/2010 10:28

J1B4T3
1011106-04 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polynuclear Aromatic Compounds by SW846 8310

Naphthalene	23100 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Acenaphthylene	16400 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Acenaphthene	3680 U	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Fluorene	1060 J, D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Phenanthrene	4650 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Anthracene	1640 J, D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Fluoranthene	67900 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Indeno[1,2,3-cd]pyrene	3680 U	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Pyrene	165000 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Benzo[a]anthracene	12000 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Chrysene	25700 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Benzo[b] fluoranthene	19400 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Benzo[k] fluoranthene	11800 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Benzo[a] pyrene	23100 D	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Dibenz[a,h]anthracene	3680 U	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Benzo[g,h,i] perylene	3680 U	3680	ug/kg dry	1000	L011275	11/18/2010	12/06/2010	8310
Surrogate: Triphenylene	7930 % *	68-129			L011275	11/18/2010	12/06/2010	8310



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-174 Project Number: K2573 Project Manager: Joan Kessner	Reported: 12/07/2010 10:28
---	---	-------------------------------

J1B4T4
1011106-05 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polynuclear Aromatic Compounds by SW846 8310

Naphthalene	98.6 D	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Acenaphthylene	2810 D	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Acenaphthene	82.9 U	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Fluorene	127 D	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Phenanthrene	31.7 J, D	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Anthracene	67.0 J, D	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Fluoranthene	762 D	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Indeno[1,2,3-cd]pyrene	82.9 U	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Pyrene	21.9 J, D	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Benzo[a]anthracene	82.9 U	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Chrysene	46.3 J, D	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Benzo[b] fluoranthene	82.9 U	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Benzo[k] fluoranthene	82.9 U	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Benzo[a] pyrene	82.9 U	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Dibenz[a,h]anthracene	82.9 U	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Benzo[g,h,i] perylene	82.9 U	82.9	ug/kg dry	25	L011275	11/18/2010	12/06/2010	8310
Surrogate: Triphenylene	97 %	68-129			L011275	11/18/2010	12/06/2010	8310



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/07/2010 10:28

J1B4T5
1011106-06 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polynuclear Aromatic Compounds by SW846 8310

Naphthalene	169 D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Acenaphthylene	228 D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Acenaphthene	263 D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Fluorene	57.1 D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Phenanthrene	34.2 U	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Anthracene	10.3 J, D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Fluoranthene	772 D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Indeno[1,2,3-cd]pyrene	26.7 J, D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Pyrene	20.7 J, D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benz[a]anthracene	115 D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Chrysene	634 D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[b] fluoranthene	54.5 D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[k] fluoranthene	34.2 U	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[a] pyrene	34.2 U	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Dibenz[a,h]anthracene	34.2 U	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Benzo[g,h,i] perylene	10.6 J, D	34.2	ug/kg dry	10	L011275	11/18/2010	12/06/2010	8310
Surrogate: Triphenylene	374 % *	68-129			L011275	11/18/2010	12/06/2010	8310



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/07/2010 10:28

Polynuclear Aromatic Compounds by SW846 8310 - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L011275 - SW 3540C									
Blank (L011275-BLK1)			Prepared: 11/18/2010 Analyzed: 11/30/2010						
Naphthalene	3.33 U	3.33	ug/kg wet						
Acenaphthylene	3.33 U	3.33	ug/kg wet						
Acenaphthene	3.33 U	3.33	ug/kg wet						
Fluorene	3.33 U	3.33	ug/kg wet						
Phenanthrene	3.33 U	3.33	ug/kg wet						
Anthracene	3.33 U	3.33	ug/kg wet						
Fluoranthene	3.33 U	3.33	ug/kg wet						
Indeno[1,2,3-cd]pyrene	3.33 U	3.33	ug/kg wet						
Pyrene	3.33 U	3.33	ug/kg wet						
Benz[a]anthracene	3.33 U	3.33	ug/kg wet						
Chrysene	3.33 U	3.33	ug/kg wet						
Benzo[b] fluoranthene	3.33 U	3.33	ug/kg wet						
Benzo[k] fluoranthene	3.33 U	3.33	ug/kg wet						
Benzo[a] pyrene	3.33 U	3.33	ug/kg wet						
Dibenz[a,h]anthracene	3.33 U	3.33	ug/kg wet						
Benzo[g,h,i] perylene	3.33 U	3.33	ug/kg wet						
<i>Surrogate: Triphenylene</i>	154		ug/kg wet	166.67		92	68-129		
LCS (L011275-BS1)			Prepared: 11/18/2010 Analyzed: 11/30/2010						
Naphthalene	159	3.33	ug/kg wet	166.67		95	0-127		
Acenaphthylene	176	3.33	ug/kg wet	166.67		105	50-140		
Acenaphthene	143	3.33	ug/kg wet	166.67		86	17-139		
Fluorene	147	3.33	ug/kg wet	166.67		88	28-145		
Phenanthrene	162	3.33	ug/kg wet	166.67		97	30-152		
Anthracene	174	3.33	ug/kg wet	166.67		104	19-171		
Fluoranthene	171	3.33	ug/kg wet	166.67		103	34-159		
Indeno[1,2,3-cd]pyrene	175	3.33	ug/kg wet	166.67		105	31-156		
Pyrene	171	3.33	ug/kg wet	166.67		103	33-152		
Benz[a]anthracene	159	3.33	ug/kg wet	166.67		96	32-157		
Chrysene	174	3.33	ug/kg wet	166.67		104	31-159		
Benzo[b] fluoranthene	167	3.33	ug/kg wet	166.67		100	33-164		
Benzo[k] fluoranthene	167	3.33	ug/kg wet	166.67		100	28-161		
Benzo[a] pyrene	162	3.33	ug/kg wet	166.67		97	29-149		
Dibenz[a,h]anthracene	169	3.33	ug/kg wet	166.67		101	27-153		
Benzo[g,h,i] perylene	171	3.33	ug/kg wet	166.67		103	32-157		
<i>Surrogate: Triphenylene</i>	163		ug/kg wet	166.67		98	68-129		



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/07/2010 10:28

Polynuclear Aromatic Compounds by SW846 8310 - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L011275 - SW 3540C									
Matrix Spike (L011275-MS3)		Source: 1011106-02		Prepared: 11/18/2010		Analyzed: 12/06/2010			
Naphthalene	134 D	34.4	ug/kg dry	172.14	124	5	0-127		
Acenaphthylene	276 D	34.4	ug/kg dry	172.14	79.7	114	50-140		
Acenaphthene	169 D	34.4	ug/kg dry	172.14	258	-52*	17-139		
Fluorene	159 D	34.4	ug/kg dry	172.14	33.4 U	92	28-145		
Phenanthrene	102 D	34.4	ug/kg dry	172.14	35.4	39	30-152		
Anthracene	203 D	34.4	ug/kg dry	172.14	49.0	89	19-171		
Fluoranthene	613 D	34.4	ug/kg dry	172.14	214	232*	34-159		
Indeno[1,2,3-cd]pyrene	115 D	34.4	ug/kg dry	172.14	34.1	47	31-156		
Pyrene	84.9 D	34.4	ug/kg dry	172.14	33.4 U	49	33-152		
Benz[a]anthracene	342 D	34.4	ug/kg dry	172.14	15.4	189*	32-157		
Chrysene	1520 D	34.4	ug/kg dry	172.14	731	460*	31-159		
Benzo[b] fluoranthene	199 D	34.4	ug/kg dry	172.14	95.4	60	33-164		
Benzo[k] fluoranthene	111 D	34.4	ug/kg dry	172.14	33.4 U	64	28-161		
Benzo[a] pyrene	72.6 D	34.4	ug/kg dry	172.14	33.4 U	42	29-149		
Dibenz[a,h]anthracene	87.6 D	34.4	ug/kg dry	172.14	33.4 U	51	27-153		
Benzo[g,h,i] perylene	103 D	34.4	ug/kg dry	172.14	9.19	55	32-157		
<i>Surrogate: Triphenylene</i>	767		<i>ug/kg dry</i>	172.14		445*	68-129		
Matrix Spike Dup (L011275-MSD3)		Source: 1011106-02		Prepared: 11/18/2010		Analyzed: 12/06/2010			
Naphthalene	888 D	34.2	ug/kg dry	171.11	124	446*	0-127	195*	40
Acenaphthylene	293 D	34.2	ug/kg dry	171.11	79.7	125	50-140	9	40
Acenaphthene	253 D	34.2	ug/kg dry	171.11	258	-3*	17-139	-181	40
Fluorene	165 D	34.2	ug/kg dry	171.11	33.4 U	97	28-145	4	40
Phenanthrene	145 D	34.2	ug/kg dry	171.11	35.4	64	30-152	48*	40
Anthracene	225 D	34.2	ug/kg dry	171.11	49.0	103	19-171	14	40
Fluoranthene	1000 D	34.2	ug/kg dry	171.11	214	460*	34-159	66*	40
Indeno[1,2,3-cd]pyrene	118 D	34.2	ug/kg dry	171.11	34.1	49	31-156	5	40
Pyrene	873 D	34.2	ug/kg dry	171.11	33.4 U	510*	33-152	165*	40
Benz[a]anthracene	395 D	34.2	ug/kg dry	171.11	15.4	222*	32-157	16	40
Chrysene	2570 D	34.2	ug/kg dry	171.11	731	1070*	31-159	80*	40
Benzo[b] fluoranthene	201 D	34.2	ug/kg dry	171.11	95.4	62	33-164	3	40
Benzo[k] fluoranthene	111 D	34.2	ug/kg dry	171.11	33.4 U	65	28-161	0.2	40
Benzo[a] pyrene	88.0 D	34.2	ug/kg dry	171.11	33.4 U	51	29-149	20	40
Dibenz[a,h]anthracene	27.2 J, D	34.2	ug/kg dry	171.11	33.4 U	16*	27-153	105*	40
Benzo[g,h,i] perylene	88.3 D	34.2	ug/kg dry	171.11	9.19	46	32-157	17	40
<i>Surrogate: Triphenylene</i>	927		<i>ug/kg dry</i>	171.11		542*	68-129		

PREPARATION BENCH SHEET

L011275

Lionville Laboratory

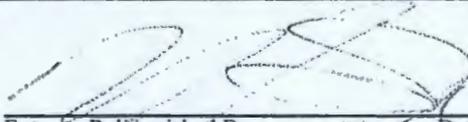
Printed: 11/23/2010 10:34:44AM

Matrix: Solid

Prepared using: HPLC - SW 3540C

Surrogate used: 1001909

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1011090-01	8310 PAH	11/18/2010 16:55	30.18	5				500	WC-Hanford, Inc.	
1011090-02	8310 PAH	11/18/2010 16:55	10.31	5				500	WC-Hanford, Inc.	
1011090-03	8310 PAH	11/18/2010 16:55	12.26	5				500	WC-Hanford, Inc.	
1011093-01	8310 PAH	11/18/2010 16:55	20.56	5				500	WC-Hanford, Inc.	
1011106-01	8310 PAH	11/18/2010 16:55	31.55	5				500	WC-Hanford, Inc.	
1011106-02	8310 PAH	11/18/2010 16:55	30.91	5				500	WC-Hanford, Inc.	
1011106-03	8310 PAH	11/18/2010 16:55	31.28	5				500	WC-Hanford, Inc.	
1011106-04	8310 PAH	11/18/2010 16:55	31.25	5				500	WC-Hanford, Inc.	
1011106-05	8310 PAH	11/18/2010 16:55	30.99	5				500	WC-Hanford, Inc.	
1011106-06	8310 PAH	11/18/2010 16:55	30.2	5				500	WC-Hanford, Inc.	
1011108-01	8310 PAH	11/18/2010 16:55	15.67	5				500	WC-Hanford, Inc.	
1011108-02	8310 PAH	11/18/2010 16:55	30.16	5				500	WC-Hanford, Inc.	
1011109-01	8310 PAH	11/18/2010 16:55	30.27	5				500	WC-Hanford, Inc.	
L011275-BLK1	QC	11/18/2010 16:55	30	5				500		
L011275-BS1	QC	11/18/2010 16:55	30	5	1001668		1000	500		
L011275-MS1	QC	11/18/2010 16:55	30.27	5	1001668	1011090-01	1000	500		
L011275-MS2	QC	11/18/2010 16:55	21.37	5	1001668	1011093-01	1000	500		
L011275-MS3	QC	11/18/2010 16:55	30.01	5	1001668	1011106-02	1000	500		
L011275-MS4	QC	11/18/2010 16:55	15.86	5	1001668	1011108-01	1000	500		
L011275-MS5	QC	11/18/2010 16:55	30.27	5	1001668	1011109-01	1000	500		


11/23/10 1034
✓
11-23-10

Extracts Relinquished By _____ Date _____
 Extracts Received By _____
Date _____

PREPARATION BENCH SHEET

L011275

Lionville Laboratory

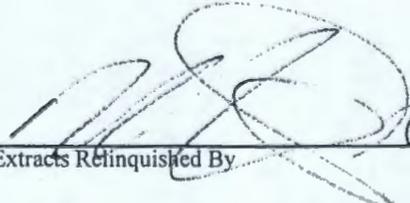
Printed: 11/23/2010 10:34:44AM

Matrix: Solid

Prepared using: HPLC - SW 3540C

Surrogate used: 1001909

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
L011275-MSD1	QC	11/18/2010 16:55	30.46	5	1001668	1011090-01	1000	500		
L011275-MSD2	QC	11/18/2010 16:55	20.17	5	1001668	1011093-01	1000	500		
L011275-MSD3	QC	11/18/2010 16:55	30.19	5	1001668	1011106-02	1000	500		
L011275-MSD4	QC	11/18/2010 16:55	15.72	5	1001668	1011108-01	1000	500		
L011275-MSD5	QC	11/18/2010 16:55	30.46	5	1001668	1011109-01	1000	500		


 Extracts Relinquished By _____ Date 11/23/10 10:34


 Extracts Received By _____ Date 11-23-10

Custody Transfer Record/Lab Work Request



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

1011106

Client <u>W.C. Hanford SA# RC-174</u>	Refrigerator #	A	B	C	D				
Est. Final Proj. Sampling Date _____	#/Type Container	Liquid							
Project# _____		Solid	1AG	1AG	1AG	1AG			
Project Contact/Phone# _____	Volume		120	120	120	125			
Lionville Laboratory Project Manager <u>O. JOHNSON</u>	Preservatives		-	-	-	-			
QC <u>SW</u> Del <u>STA</u> TAT <u>15 day 5</u>	ANALYSES REQUESTED	ORGANIC				INORG			
Date Rec'd <u>11-12-10</u> Date Due <u>11-27-10</u>		VOA	BNA	PCB	Herb	PAHs	TPH	Metal	Other

MATRIX CODES: S- Soil SE- Sediment SO- Solid SL- Sludge W- Water O- Oil A- Air DS- Drum DL- Drum L- Liquids EP/TCLP Laachate WI- Wipe X- Other F- Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only																	
			MS	MSD				8082	830	ARO	Md	CR6													
			01	J1B470						Soil	11-10-10	0800													
02		1					0805	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
03		2					0830	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
04		3					0900	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
05		4					0930	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
06		5				11-12-10	0805	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Special Instructions: Run matrix QC

Special Instructions:

- _____
- _____
- _____
- _____
- _____
- _____

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
<u>Fed Ep</u>	<u>[Signature]</u>	<u>11/12/10</u>	<u>1020</u>								

ORIGINAL
REWRITTEN

10/11/10

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-174-008		Page 1 of 2			
Collector <i>WT Severson</i>		Company Contact Joan Kessner		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <i>86</i>		Data Turnaround 15 Days		
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr		Sampling Location 100-K-86 <i>Surface Samples</i>		SAF No. RC-174				<i>JED</i> <i>11-10-10</i>				
Ice Chest No. <i>AFS-04-036</i>		Field Logbook No. EL-1649		COA S10K86A000		Method of Shipment Fed Ex						
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A100614</i>				Bill of Lading/Air Bill No. See OSPC						
POSSIBLE SAMPLE HAZARDS/REMARKS <i>None JED 11/10/10</i>				D None	C Cool 4C	Cool 4C	B Cool 4C	A Cool 4C	None	Cool 4C		
Special Handling and/or Storage <i>Cool 4C JED 11/10/10</i>				Preservation	Type of Container	No. of Container(s)	Volume	aG	aG	aG	aG	
				1	1	1	1	1	1	1	1	
				125mL	120mL	60mL	120mL	120mL	500mL	<i>125ml</i>		
SAMPLE ANALYSIS				See item (1) in Special Instructions.	TPH-Diesel Range - WTPH-D+	VOA - 8260A (TCL)	PAHs - 8310	PCBs - 8082	See item (2) in Special Instructions.	<i>hexavalent Chromium - 7196</i>		
Sample No.	Matrix *	Sample Date	Sample Time									
J1B4T0	SOIL	11/10/10	0800	✓			✓				EB	
J1B4T1	SOIL	11/10/10	0805	✓	✓		✓	✓		✓	SS 1	
J1B4T2	SOIL	11/10/10	0830	✓	✓		✓	✓		✓	SS 2	
J1B4T3	SOIL	11/10/10	0900	✓	✓		✓	✓		✓	SS 3	
J1B4T4	SOIL	11/10/10	0930	✓	✓		✓	✓		✓	SS 4	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <i>Whitney Severson</i>		Date/Time <i>1040 11/10/10</i>		Received By/Stored In <i>JED</i>		Date/Time <i>1040 11/10/10</i>		(1) ICP Metals - 6010TR (Close-out List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc]; Mercury - 7471 - (CV) (Mercury) (2) Gamma Spec (Client List) [Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gross Alpha & Gross Beta <i>Use material from ICP Metals for Chromium Hex. JED 6/2/10</i>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>JED</i>		Date/Time <i>1100 11/10/10</i>		Received By/Stored In <i>J.R. Severson</i>		Date/Time <i>1100 11/10/10</i>						
Relinquished By/Removed From <i>J.R. Severson</i>		Date/Time <i>1200 11/10/10</i>		Received By/Stored In <i>J.E. Beaulieu</i>		Date/Time <i>11-10-10</i>						
Relinquished By/Removed From <i>J.E. Beaulieu</i>		Date/Time <i>0915 11-11-10</i>		Received By/Stored In <i>FED EX</i>		Date/Time						
Relinquished By/Removed From <i>JED</i>		Date/Time <i>1020 11-12-10</i>		Received By/Stored In <i>VICTOR HERNANDEZ</i>		Date/Time <i>11-20-10 1020</i>						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION	Received By					Title					Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method					Disposed By					Date/Time	



1011106

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-174-008		Page 2 of 2	
Collector WT Sexsmith		Company Contact Joan Kessner		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 88 C JEB 11-10-10	
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr		Sampling Location 100-K-86 Surface Samples		SAF No. RC-174		Data Turnaround 15 Days			
Ice Chest No. AFS-04-036		Field Logbook No. BL-1649		COA S10K86A000		Method of Shipment Fed Ex			
Shipped To EBERLINE SERVICES / <u>CONVILLE</u>		Offsite Property No. A100614		Bill of Lading/Air Bill No. See OSPC					

POSSIBLE SAMPLE HAZARDS/REMARKS None JSD 11/10/10 Special Handling and/or Storage COOL 4C JSD 11/10/10	Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	Cool 4C			
	Type of Container	aG	aG	aG	aG	aG	P	aG			
	No. of Container(s)	1	1	1	1	1	1	0			
	Volume	125mL	120mL	60mL	120mL	120mL	500mL	125mL			

SAMPLE ANALYSIS				See item (1) in Special Instructions.	TPH-Diesel Range - WTPH-D +	VOA - 8260A (TCL)	PAHs - 8310	PCBs - 8082	See item (2) in Special Instructions.	Chromium Hex - 7196
-----------------	--	--	--	---------------------------------------	-----------------------------	-------------------	-------------	-------------	---------------------------------------	---------------------

Sample No.	Matrix *	Sample Date	Sample Time								
J1B4T5	SOIL	11/12/10	0805	✓	✓		✓	✓		✓	D

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury) (2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gross Alpha & Gross Beta Use material from ICP Metals for Chromium-Hex JSD 6/2/10
Whitney Sexsmith Kelly J.P.		11/10/10 1040		J. DeBouque J. DeBouque		11/10/10 1046		
J. DeBouque J. DeBouque		11/10/10 1100		J.R. Schindler		11/10/10 1100		
J.R. Schindler		11/10/10 1200		J.E. Beal		11-10-10 1200		
J.E. Beal		11-11-10 0915		FED EX				
Victor Hernandez		11-12-10 1020		Victor Hernandez		11-12-10 1020		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
LABORATORY SECTION		Received By		Title		Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time		



Lionville Laboratory
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. Hanford
Project/SAE/SOW/Release #: RC-174

Date: 11/12/10

LvL Batch #: 1011106

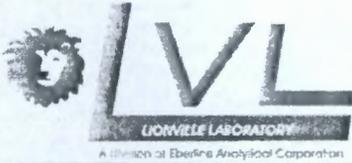
Sample Custodian: Tutor Neerand

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | |
|--|--|---|
| 1. Samples Hand Delivered or <u>Shipped?</u> | Carrier <u>Fed Ex</u> | Airbill # <u>7964 4077 6048</u> |
| 2. Custody Seals on coolers or shipping containers intact, signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Comments: |
| 4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5. Samples received cooled or ambient?

How was the temperature taken?

Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) | Temp <u>2.1</u> °C
<input checked="" type="checkbox"/> IR <input type="checkbox"/> Temp. Blank
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Cooler # <u>AFS-04-036</u>
<input type="checkbox"/> Other (Specify): |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 7. COC (Client & LvL) signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 9. All samples on COC received?
All samples received on COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 10. All sample label information matches COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 11. Samples properly preserved? (If #5 is no, then this is no.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 12. Samples received within hold times?
Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 16. Project Manager contacted concerning any discrepancies?
Person Contacted _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A
Date _____ |



264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

RECEIVED
NOV 24 2010

WC-Hanford, Inc.
2620 Fermi Avenue
Richland WA, 99354

Project: RC-174
Project Number: K2573
Project Manager: Joan Kessner

Reported:
12/06/2010 09:17

Analytical Report for Polychlorinated Biphenyls by SW846 8082

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1B4T1	1011106-02	Soil	11/10/2010 08:05	11/12/2010 10:20
J1B4T2	1011106-03	Soil	11/10/2010 08:30	11/12/2010 10:20
J1B4T3	1011106-04	Soil	11/10/2010 09:00	11/12/2010 10:20
J1B4T4	1011106-05	Soil	11/10/2010 09:30	11/12/2010 10:20
J1B4T5	1011106-06	Soil	11/10/2010 08:05	11/12/2010 10:20



264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-174 K2543
LVL #: 1011106

W.O. #: 60049-001-001-0001-00
Received: 11-12-2010

PCBs

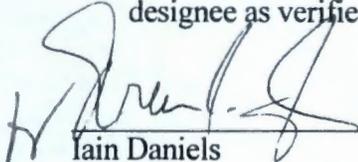
Five (5) soil samples were collected on 11-10-2010.

The samples and associated QC samples were extracted 11-24-2010 and analyzed 11-29-2010, 12-01-2010 according to criteria set forth in Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3540C and the analysis procedure was based on SW846 Method 8082. All samples received Copper-Sulfur and Sulfuric Acid cleanups based on SW846 methods 3660A and 3665A,

Lionville Laboratory (LvL) is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements:

1. The results presented in this report are derived from samples that met LvL's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. Six (6) of eighteen (18) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#10GC391) has been enclosed.
4. The method blank was below the reporting limits for all target compounds.
5. All blank spike recoveries were within acceptance criteria.
6. One (1) of four (4) matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#10GC391) has been enclosed.
7. The samples are reported on a dry weight basis.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or a designee as verified by the following signature.



Iain Daniels
LvL Laboratory Manager

12/7/10

Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 106C391

Initiator: Catherine Carey
 Date: 12/02/10
 Client: W.C. Hinford

Batch: 101106
 Samples: D2, D3, D5, D6, MS1/MS2
 Method: SW846/MCAWW/CLP1

Parameter: SOIL
 Matrix: KB
 Prep Batch: L011372

1. Reason for SDR

a. COC Discrepancy Tech Profile Error Client Request Sampler Error on C-O-C
 Transcription Error Wrong Test Code Other _____

b. General Discrepancy
 Missing Sample/Extract Container Broken Wrong Sample Pulled Label ID's Illegible
 Hold Time Exceeded Insufficient Sample Preservation Wrong Received Past Hold
 Improper Bottle Type Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

DCB recovery is low in J1B4T1, J1B4T2, J1B4T4, J1B4T5, MS1/MS2
 Arxlor 1260 recovery is low in MS01

2. Known or Probable Causes(s)

Matrix effect

3. Discussion and Proposed Action

Other Description:

- Re-log
- Entire Batch
- Following Samples: _____
- Re-leach
- Re-extract
- Re-digest
- Revise EDD
- Change Test Code to _____
- Place On/Take Off Hold (circle)

There is a lot of non target organics showing in the chromatogram. All sample have low DCB but B/Bs are good. This is a definite matrix effect. Narrate 25

4. Project Manager Instructions...signature/date: _____

- Concur with Proposed Action
- Disagree with Proposed Action; See Instruction
- Include in Case Narrative
- Client Contacted: _____
- Date/Person _____
- Add _____
- Cancel _____

5. Final Action...signature/date: ECB 12-07-10

Other Explanation:

- Verified re-[log][leach][extract][digest][analysis] (circle)
- Included in Case Narrative
- Hard Copy COC Revised
- Electronic COC Revised
- EDD Corrections Completed

When Final Action has been recorded, forward original to QA for disposition.

Route

- Lab Manager: Daniels
- Project Mgr (circle): Johnson / Stone
- Sample Prep (circle): Ford
- Log-in: King

Route

- Metals: Welsh / _____
- Inorganic: Perrone / _____
- GC/IC: Carey / _____
- MS VOA: Rubino / _____
- MS BNA: Carden / _____
- Other: _____



GLOSSARY OF DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.
- .I = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.
- P = This flag is used for a dual column analysis (i.e. pesticides/PCB/herbicides) when there is greater than 40% difference for detected concentrations between the two GC columns; the lower of the two values is reported on Form 1 and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- NS = Not Spiked.
- SP = Indicates Spiked Compound.
- NPM = No pattern match for multi-component target analytes.



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-174 Project Number: K2573 Project Manager: Joan Kessner	Reported: 12/06/2010 09:17
---	---	-------------------------------

J1B4T1
1011106-02 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Aroclor 1016	13.6 U	13.6	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1221	13.6 U	13.6	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1232	13.6 U	13.6	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1242	13.6 U	13.6	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1248	13.6 U	13.6	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1254	29.9	13.6	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1260	13.6 U	13.6	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Surrogate: Decachlorobiphenyl	28 % *	43-144			L011372	11/24/2010	12/01/2010	8082
Surrogate: Tetrachloro-meta-xylene	90 %	52-141			L011372	11/24/2010	12/01/2010	8082



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:17

J1B4T2
1011106-03 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Aroclor 1016	14.3 U	14.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1221	14.3 U	14.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1232	14.3 U	14.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1242	14.3 U	14.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1248	14.3 U	14.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1254	14.3 U	14.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1260	14.3 U	14.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Surrogate: Decachlorobiphenyl	42 % *	43-144			L011372	11/24/2010	12/01/2010	8082
Surrogate: Tetrachloro-meta-xylene	65 %	52-141			L011372	11/24/2010	12/01/2010	8082



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:17

J1B4T3
1011106-04 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Aroclor 1016	14.4 U	14.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1221	14.4 U	14.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1232	14.4 U	14.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1242	14.4 U	14.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1248	14.4 U	14.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1254	14.4 U	14.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1260	14.4 U	14.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Surrogate: Decachlorobiphenyl	48 %	43-144			L011372	11/24/2010	12/01/2010	8082
Surrogate: Tetrachloro-meta-xylene	61 %	52-141			L011372	11/24/2010	12/01/2010	8082



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:17

J1B4T4
1011106-05 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Aroclor 1016	13.3 U	13.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1221	13.3 U	13.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1232	13.3 U	13.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1242	13.3 U	13.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1248	13.3 U	13.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1254	13.3 U	13.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1260	13.3 U	13.3	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Surrogate: Decachlorobiphenyl	27 % *	43-144			L011372	11/24/2010	12/01/2010	8082
Surrogate: Tetrachloro-meta-xylene	84 %	52-141			L011372	11/24/2010	12/01/2010	8082



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc.
 2620 Fermi Avenue
 Richland WA, 99354

Project: RC-174
 Project Number: K2573
 Project Manager: Joan Kessner

Reported:
 12/06/2010 09:17

J1B4T5
1011106-06 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
---------	----------------------	-----------------	-------	----------	-------	----------	----------	--------

Lionville Laboratory

Polychlorinated Biphenyls by SW846 8082

Aroclor 1016	13.4 U	13.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1221	13.4 U	13.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1232	13.4 U	13.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1242	13.4 U	13.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1248	13.4 U	13.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1254	27.5	13.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Aroclor 1260	13.4 U	13.4	ug/kg dry	1	L011372	11/24/2010	12/01/2010	8082
Surrogate: Decachlorobiphenyl	23 % *	43-144			L011372	11/24/2010	12/01/2010	8082
Surrogate: Tetrachloro-meta-xylene	77 %	52-141			L011372	11/24/2010	12/01/2010	8082



264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-174 Project Number: K2573 Project Manager: Joan Kessner	Reported: 12/06/2010 09:17
---	---	-------------------------------

Polychlorinated Biphenyls by SW846 8082 - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L011372 - SW 3540C									
Blank (L011372-BLK2)					Prepared: 11/24/2010 Analyzed: 11/29/2010				
Aroclor 1016	13.3 U	13.3	ug/kg wet						
Aroclor 1221	13.3 U	13.3	ug/kg wet						
Aroclor 1232	13.3 U	13.3	ug/kg wet						
Aroclor 1242	13.3 U	13.3	ug/kg wet						
Aroclor 1248	13.3 U	13.3	ug/kg wet						
Aroclor 1254	13.3 U	13.3	ug/kg wet						
Aroclor 1260	13.3 U	13.3	ug/kg wet						
Surrogate: Decachlorobiphenyl	32.8		ug/kg wet	33.333		98	43-144		
Surrogate: Tetrachloro-meta-xylene	33.4		ug/kg wet	33.337		100	52-141		
LCS (L011372-BS2)					Prepared: 11/24/2010 Analyzed: 11/29/2010				
Aroclor 1016	190	13.3	ug/kg wet	166.67		114	50-138		
Aroclor 1260	198	13.3	ug/kg wet	166.67		119	50-148		
Surrogate: Decachlorobiphenyl	38.0		ug/kg wet	33.333		114	43-144		
Surrogate: Tetrachloro-meta-xylene	40.6		ug/kg wet	33.337		122	52-141		
Matrix Spike (L011372-MS1)					Source: 1011106-06 Prepared: 11/24/2010 Analyzed: 12/01/2010				
Aroclor 1016	134	13.5	ug/kg dry	169.24	13.4 U	79	50-138		
Aroclor 1260	85.9	13.5	ug/kg dry	169.24	13.4 U	51	50-148		
Surrogate: Decachlorobiphenyl	9.68		ug/kg dry	33.849		29*	43-144		
Surrogate: Tetrachloro-meta-xylene	31.9		ug/kg dry	33.852		94	52-141		
Matrix Spike Dup (L011372-MSD1)					Source: 1011106-06 Prepared: 11/24/2010 Analyzed: 12/01/2010				
Aroclor 1016	114	13.7	ug/kg dry	171.15	13.4 U	67	50-138	17	40
Aroclor 1260	74.6	13.7	ug/kg dry	171.15	13.4 U	44*	50-148	15	40
Surrogate: Decachlorobiphenyl	7.60		ug/kg dry	34.230		22*	43-144		
Surrogate: Tetrachloro-meta-xylene	27.3		ug/kg dry	34.233		80	52-141		

PREPARATION BENCH SHEET

L011372

Lionville Laboratory

Printed: 11/29/2010 4:15:40PM

Matrix: Solid

Prepared using: GC - SW 3540C

Surrogate used: 1001740

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1010086-12RE1	8082 PCBs	11/04/2010 14:10	30	10				250	LQA	From L011083 by MLF on 11/24/2010
1011106-02	8082 PCBs	11/24/2010 11:55	30.32	10				250	WC-Hanford, Inc.	
1011106-03	8082 PCBs	11/24/2010 11:55	31.83	10				250	WC-Hanford, Inc.	
1011106-04	8082 PCBs	11/24/2010 11:55	31.93	10				250	WC-Hanford, Inc.	
1011106-05	8082 PCBs	11/24/2010 11:55	30.85	10				250	WC-Hanford, Inc.	
1011106-06	8081A TCL Pesticides	11/24/2010 11:55	30.71	10				250	WC-Hanford, Inc.	Added for BatchQC in: L011372
1011106-06	8082 PCBs	11/24/2010 11:55	30.71	10				250	WC-Hanford, Inc.	
1011108-01	8082 PCBs	11/24/2010 11:55	16.03	10				250	WC-Hanford, Inc.	
1011108-02	8081A TCL Pesticides	11/24/2010 11:55	30	10				250	WC-Hanford, Inc.	Added for BatchQC in: L011372
1011108-02	8082 PCBs	11/24/2010 11:55	30	10				250	WC-Hanford, Inc.	
1011109-01	8081A TCL Pesticides	11/24/2010 11:55	10.79	10				250	WC-Hanford, Inc.	Added for BatchQC in: L011372
1011109-01	8082 PCBs	11/24/2010 11:55	10.79	10				250	WC-Hanford, Inc.	
1011183-01	8081A TCL Pesticides	11/24/2010 11:55	30.18	10				250	WC-Hanford, Inc.	
1011183-01	8082 PCBs	11/24/2010 11:55	30.18	10				250	WC-Hanford, Inc.	
1011183-02	8081A TCL Pesticides	11/24/2010 11:55	30.06	10				250	WC-Hanford, Inc.	
1011183-02	8082 PCBs	11/24/2010 11:55	30.06	10				250	WC-Hanford, Inc.	
L011372-BLK1	QC	11/24/2010 11:55	30	10				250		
L011372-BLK2	QC	11/24/2010 11:55	30	10				250		
L011372-BS1	QC	11/24/2010 11:55	30	10	1001086		250	250		Pest
L011372-BS2	QC	11/24/2010 11:55	30	10	1001362		250	250		PCB

[Signature]
 Extracts Relinquished By _____ Date 11/29/10 16:28

S cleaned 11/29/10 52
Shak
 Extracts Received By _____ Date 11/29/10 17:00

PREPARATION BENCH SHEET

L011372

Lionville Laboratory

Printed: 11/29/2010 4:15:40PM

Matrix: Solid

Prepared using: GC - SW 3540C

Surrogate used: 1001740

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
L011372-MS1	QC	11/24/2010 11:55	30.51	10	1001362	1011106-06	250	250		PCB
L011372-MS2	QC	11/24/2010 11:55	15.27	10	1001362	1011108-02	250	250		PCB
L011372-MS3	QC	11/24/2010 11:55	10.18	10	1001362	1011109-01	250	250		PCB
L011372-MS4	QC	11/24/2010 11:55	30.17	10	1001086	1011183-01	250	250		PEST
L011372-MS5	QC	11/24/2010 11:55	30.42	10	1001362	1011183-01	250	250		PCB
L011372-MSD1	QC	11/24/2010 11:55	30.17	10	1001362	1011106-06	250	250		PCB
L011372-MSD2	QC	11/24/2010 11:55	15.86	10	1001362	1011108-02	250	250		PCB
L011372-MSD3	QC	11/24/2010 11:55	10.15	10	1001362	1011109-01	250	250		PCB
L011372-MSD4	QC	11/24/2010 11:55	30.27	10	1001086	1011183-01	250	250		PEST
L011372-MSD5	QC	11/24/2010 11:55	30.19	10	1001362	1011183-01	250	250		PCB

[Signature]
 Extracts Relinquished By _____
 Date 11/26/10 16:25

[Signature]
 Extracts Received By _____
 Date 11/29/10 17:00

Custody Transfer Record/Lab Work Request



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

1011106

Client W.C. Hanford SA# RC-174
 Est. Final Proj. Sampling Date _____
 Project# _____
 Project Contact/Phone# _____
 Lionville Laboratory Project Manager O. JOHNSON
 QC SW Del STA TAT 15 days

Refrigerator #	A	B	C	D					
	1	1	1	1					
#/Type Container	Liquid								
	Solid	1AG	1AG	1AG	1AG				
Volume		120	120	120	125				
Preservatives		-	-	-					
ANALYSES REQUESTED →	ORGANIC				INORG		Her		
	VOA	BNA	PCB	Herb	PAHs	TPH	Metal	Hg	As

Date Rec'd 11-12-10 Date Due 11-27-10

- MATRIX CODES:
- S- Soil
 - SE- Sediment
 - SO- Solid
 - SL- Sludge
 - W- Water
 - O- Oil
 - A- Air
 - DS- Drum Solids
 - DL- Drum Liquids
 - L- EP/TCLP Leachate
 - WI- Wipe
 - X- Other
 - F- Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only													
		MS	MSD				8082	830	PRO	MAX	CR6									
01	J1B4T0			Soil	11-10-10	0800														
02	1					0805														
03	2					0830														
04	3					0900														
05	4					0930														
06	5				11-12-10	0805														

Special Instructions: Run matrix QC

- Special Instructions:
1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____

Relinquished by	Received by	Date	Time
<u>Fed Ep</u>	<u>VAH</u>	<u>11/2/10</u>	<u>1020</u>

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

410000001

10/11/06

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-174-008	Page 1 of 2									
Collector <i>WT Sexsmith</i>		Company Contact Joan Kessner		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code <i>86</i>	Data Turnaround 15 Days								
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr		Sampling Location 100-K-86 <i>Surface Samples</i>		SAF No. RC-174		JED 11-10-10											
Ice Chest No. <i>AFS-04-036</i>		Field Logbook No. EL-1649		COA S10K86A000		Method of Shipment Fed Ex											
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A100614</i>		Bill of Lading/Air Bill No. See OSPC													
POSSIBLE SAMPLE HAZARDS/REMARKS <i>None JED 11/10/10</i> Special Handling and/or Storage <i>Cool 4C JED 11/10/10</i>				D None		C Cool 4C		B Cool 4C		A Cool 4C		None		Cool 4C			
				Preservation		aG		aG		aG		aG		P		<i>aG</i>	
				Type of Container		1		1		1		1		1		<i>0</i>	
				No. of Container(s)		125mL		120mL		60mL		120mL		120mL		500mL	
SAMPLE ANALYSIS				See item (1) in Special Instructions.		TPH-Diesel Range - WTPH-D +		VOA - 8260A (TCL)		PAHs - 8310		PCBs - 8082		See item (2) in Special Instructions.		<i>hexavalent Chromium - 7196</i>	
				Sample No.		Matrix *		Sample Date		Sample Time							
J1B4T0		SOIL		11/10/10		0800		✓		✓						<i>EB</i>	
J1B4T1		SOIL		11/10/10		0805		✓		✓		✓				<i>SS 1</i>	
J1B4T2		SOIL		11/10/10		0830		✓		✓		✓				<i>SS 2</i>	
J1B4T3		SOIL		11/10/10		0900		✓		✓		✓				<i>SS 3</i>	
J1B4T4		SOIL		11/10/10		0930		✓		✓		✓				<i>SS 4</i>	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *					
Relinquished By/Removed From <i>Whitney Sexsmith</i>		Date/Time <i>1040</i>		Received By/Stored In <i>JR DeB...</i>		Date/Time <i>11/10/10</i>		(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury) (2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gross Alpha & Gross Beta <i>USE material from ICP Metals for Chromium Hex. JED 6/2/10</i>				S=Soil SE=Settlem SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids TW=Tissue WI=Wipe LI=Liquid V=Vegetation X=Other					
Relinquished By/Removed From <i>JR DeB...</i>		Date/Time <i>1100</i>		Received By/Stored In <i>JR DeB...</i>		Date/Time <i>1100</i>											
Relinquished By/Removed From <i>J.R. ...</i>		Date/Time <i>1200</i>		Received By/Stored In <i>J.E. ...</i>		Date/Time <i>11-10-10</i>											
Relinquished By/Removed From <i>J.E. ...</i>		Date/Time <i>0915</i>		Received By/Stored In <i>FED EX</i>		Date/Time <i>11-10-10</i>											
Relinquished By/Removed From <i>FED EX</i>		Date/Time <i>11-12-10</i>		Received By/Stored In <i>VICTOR HERNANDEZ</i>		Date/Time <i>11-2-10 1020</i>											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
LABORATORY SECTION		Received By		Title				Date/Time									
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time									



1011106

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-174-008		Page 2 of 2							
Collector WT Sexsmith		Company Contact Joan Kessner		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 88 C JEB 11-10-10		Data Turnaround 15 Days							
Project Designation ARRA Remaining Sites Confirmation Sampling - Soil Full Pr		Sampling Location 100-K-86 Surface Samples		SAF No. RC-174		Method of Shipment Fed Ex											
Ice Chest No. AFS-04-036		Field Logbook No. EL-1649		COA S10K86A000		Method of Shipment Fed Ex											
Shipped To EBERLINE SERVICES / <u>CONVILLE</u>		Offsite Property No. A100614		Bill of Lading/Air Bill No. See OSPC													
POSSIBLE SAMPLE HAZARDS/REMARKS None JSD 11/10/10 Special Handling and/or Storage COOL 4C JSD 11/10/10				Preservation		None		Cool 4C		Cool 4C		Cool 4C		None		Cool 4C	
				Type of Container		nG		aG		nG		nG		P		aG	
				No. of Container(s)		1		1		1		1		1		0	
				Volume		125mL		120mL		60mL		120mL		120mL		500mL	
SAMPLE ANALYSIS				See item (1) in Special Instructions.		TPH-Diesel Range - WTPH-D +		VOA - 8260A (TCL)		PAHs - 8310		PCBs - 8082		See item (2) in Special Instructions.		Chromium Hex - 7196	
Sample No.		Matrix *		Sample Date		Sample Time											
J1B4T5		SOIL		11/12/10		0805		✓		✓		✓		✓		D	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) (Mercury) (2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta Use material from ICP Metals for Chromium-Hex JSD 6/2/10				S=Soil SE=Seiment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other					
Whitney Sexsmith		11/10/10		J. DeBuique		11/10/10											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
J. DeBuique		11/10/10		J. R. Schindler		11/10/10											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
J. R. Schindler		11/10/10 1200		J. E. Beaulieu		11-10-10											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
J. E. Beaulieu		11-11-10		FED EX													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
J. DeBuique		11-12-10 1020		Victor Hernandez		11-12-10 1020											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time											
LABORATORY SECTION		Received By		Title													
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By													



LABORATORY

Lionville Laboratory
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *W. Hartford*
 Project/SAE/SOW/Release #: *RC-174*

Date: *11/12/10*

LvL Batch #: *1011106*

Sample Custodian: *Tutor Newberry*

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | |
|--|---|---|
| 1. Samples Hand Delivered <u>or Shipped?</u> | Carrier <i>Fed Ex</i> | Airbill # <i>7964 4077 6048</i> |
| 2. Custody Seals on coolers or shipping containers intact, signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Comments: |
| 4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5. Samples received cooled or ambient?
How was the temperature taken?
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) | Temp <i>02.1</i> °C
<input checked="" type="checkbox"/> IR <input type="checkbox"/> Temp. Blank
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Cooler # <i>AFS-04-036</i>
<input type="checkbox"/> Other (Specify): |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 7. COC (Client & LvL) signed & dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 9. All samples on COC received?
All samples received on COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 10. All sample label information matches COC? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 11. Samples properly preserved? (If #5 is no. then this is no.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 12. Samples received within hold times?
Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 16. Project Manager contacted concerning any discrepancies?
Person Contacted _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A
Date _____ |