SAF-RC-042
300 Area D4 Waste Characterization Sampling - Other Liquid
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

No Distribution Required KW 12/18/12
INITIAL/DATE

COMMENTS:

SDG K4029 SAF-RC-042

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

Sample Location/Waste Site: 3718F Waste Pad Oil Drums

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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

17 December 2012

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
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 #	1211064
SDG #	K4029
SAF #	RC-042
Date Received	11/15/12
# Samples	4
Matrix	OTHER LIQUID
Volatiles	
Semivolatiles	
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
PAHs	
Herbicides	
Metals	X
Inorganics	

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 34 pages.

R:\GROUP\PM\ORLETTE\Hanford\Data\B_ltrs.DOC

CHAIN OF CUSTODY

Lionville Laboratory Use Only

1211064

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Lionville Laboratory
A Division of Eberline Analytical Corporation

Client W.C. Hanford SAF# RC-042

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager Charlotte Johnson

QC SW Del SW TAT 15

Date Rec'd 11-15-12 Date Due 11-30-12

		A						B							
Refrigerator #				2					2						
#/Type Container	Liquid			1qt					1qt						
	Solid														
Volume	Liquid			60					60						
	Solid														
Preservatives				—					—						
ANALYSES REQUESTED →		ORGANIC							INORG						
		VOA	BNA	~~Pest/~~ PCB	Herb				Metal + Hg	CN					
		Lionville Laboratory Use Only													
				8082					METALS						

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
W Water, WW Waste Water, GW Groundwater, WST Waste, WI Wipe, SO Solid, S Soil, SL Sludge, SE Sediment, PC Paint Chips, O Oil, NAL Non-Aqueous Liquid, L Leachate, A Air, T Tissue, F Fish	01	J1R5J8			O	11-14-12	0948			X				X						
	02	J1R5J9			↓	↓	0953			X				X						
	03	J1R5K0					0959			X				X						
	04	J1R5K1					1006			X				X						

Special Instructions:

METALS = RCRA 8, Totals + Be

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11-15-12	16:00

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-042-187	Page 1 of 1

Collector: RL STRICKLAND	Company Contact: Tom Edmundson; Telephone No.: 509.947.5192	Project Coordinator: KESSNER, JH	Price Code: 9K; Data Turnaround: 15 Days
Project Designation: 300 Area D4 Waste Characterization Sampling - Other Liqui	Sampling Location: 3718F Waste Pad Oil Drums	SAF No.: RC-042	
Ice Chest No.: WCH-12-032	Field Logbook No.: EL-1518-26; COA: RD4MXX2F00	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A110 416	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RAD < DOT LIMITS RS 11/14/12
POTENTIAL Be

Special Handling and/or Storage
Cool 4 Degree C

Preservation	Cool 4C	Cool 4C										
Type of Container	G/P	aG										
No. of Container(s)	1	1										
Volume	60mL	60mL										
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082										

Sample No.	Matrix *	Sample Date	Sample Time										
J1R5J8	OTHER LIQUID	11/14/12	0948	✓	✓								
J1R5J9	OTHER LIQUID	11/14/12	0953	✓	✓								
J1R5K0	OTHER LIQUID	11/14/12	0959	✓	✓								
J1R5K1	OTHER LIQUID	11/14/12	1006	✓	✓								

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From: RL STRICKLAND WCH	Date/Time: 11/14/12 1400	Received By/Stored In: FED EX	Date/Time
Relinquished By/Removed From: FED EX	Date/Time: 11.15.12 / 16:00	Received By/Stored In: [signature] D Smith	Date/Time: 11.15.12 / 16:00
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Metals - TC Primary Constituents {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Metals - TC Primary Constituents {Mercury}

REVIEWED BY SMS DATE 11/14/12

Matrix *
S=Soil
SE=Sediment
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

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

WCH-EE-011

000000004

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford Date: 11-15-12

Project/SAF/SOW/Release #: RC-042

LvL Batch #: 1211064 Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7940 7587 1120
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 5.4 °C		Cooler # WCH-12-032
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvL) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ 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.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

SR-002-B.doc

PCBs

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

WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	12/04/2012 15:20

Analytical Report for Polychlorinated Biphenyls by SW846 8082

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1R5J8	1211064-01	Other Liquid	11/14/2012 09:48	11/15/2012 16:00
J1R5J9	1211064-02	Other Liquid	11/14/2012 09:53	11/15/2012 16:00
J1R5K0	1211064-03	Other Liquid	11/14/2012 09:59	11/15/2012 16:00
J1R5K1	1211064-04	Other Liquid	11/14/2012 10:06	11/15/2012 16:00

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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Case Narrative

Client: WC-HANFORD RC-042 K4029
LVL #: 1211064

W.O. #: 60049-001-001-0001-00
Received: 11-15-2012

PCBs

Four (4) other liquid samples were collected on 11-14-2012.

The samples and associated QC samples were extracted 111-28-2012 and analyzed 11-30-2012 and 12-01-2012 according to criteria set forth in Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3580A (waste dilution 1 g into 10 mls hexane) and the analysis procedure was based on SW846 Method 8082 for client specified target compounds. All samples received Copper-Sulfur and Sulfuric Acid cleanups based on SW846 methods 3660A and 3665A, respectively.

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 with exceptions noted on the Sample Receipt Checklist.

2. All required holding times for extraction and analysis have been met.

3. All samples required a 5-fold instrument dilution due to the matrix.

4. One (1) of sixteen (16) obtainable surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 12GC205) has been enclosed.

5. The method blank was below the reporting limit for all target compounds.

6. All blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

8. Samples J1R5J8, L211246-MS1, and L211246-MSD1 required 4-fold instrument dilutions due to sample matrix. Samples J1R5J9 and J1R5K0 required 2-fold instrument dilutions due to sample matrix. Reporting limits have been adjusted to reflect the necessary dilutions.

9. All initial calibrations associated with this data set were within acceptance criteria.

10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria. Per SW846 Method 8000B, the attached table lists compounds where the %difference or drift was greater than 15%, and the mean across all compounds was used for evaluation of the continuing calibration. Results associated with these compounds are considered to have greater uncertainty.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of pages.

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.

for Iain Daniels
LvL Laboratory Manager

12/17/12
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 12GC205

Initiator: Robert Carden
Date: 12/4/12
Client: WC Hanford RC042 K4029

Batch: 1211064
Samples: JIR5K1
Method: SW846/MCAWW/CLP/

Parameter: PCB
Matrix: oil
Prep Batch: L211246

1. Reason for SDR

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

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

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

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

Decachlorobiphenyl surrogate recovery outside QC acceptance criteria 60% (10-150%)

2. Known or Probable Causes(s)

Matrix effect

3. Discussion and Proposed Action
__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

Other Description:
Coating of ECD's due to sample matrix is likely (CCV following samples was very depressed also). Reporting limits are well below TSCA levels. Report as

4. Project Manager Instructions...signature/date: 12/17/12
__ 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: 12/17/12
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

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

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: _____

QA-139-A-0208

8082A PCBs

Analytes with %Difference or %Drift >15%, Where Mean is Used for Continuing Calibration

Analyte	CCV1 11.30.12 2:47:23 PM		CCV2 11.30.12 11:13:43 PM		CCV3 12.01.12 7:18:39 AM		CCV4 12.01.12 12:41:58 PM		CCV5		CCV6		CCV7		CCV8	
	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
Tetrachloro-meta-xylene (surrogate)																
Decachlorobiphenyl (surrogate)					-19.6	-16.4	-39.6	-36.5								
Aroclor 1016-1																
Aroclor 1016-2																
Aroclor 1016-3																
Aroclor 1016-4																
Aroclor 1016-5																
Aroclor 1260-1							-16.0									
Aroclor 1260-2							-20.7	-15.9								
Aroclor 1260-3							-22.1	-20.2								
Aroclor 1260-4					-15.4		-27.9	-23.1								
Aroclor 1260-5					-17.0		-30.5	-26.8								
Mean %D or %Drift	-3.6	0.1	-0.8	1.0	-9.1	-7.8	-13.7	-11.2								

Sample results reported from affected CCV:

CCV1: L211241- BIK1, BS1, MS1, MSD1; L211246-BIK21, BS1, 1211075-02, 03, 04, 05 S2 12.04.12

CCV2: 1211075-06, 07, 08, 09, 10, 11, 12, 13, 14, 15

CCV3: 1211064-01, 02, 03, 04; L211246-MS1, MSD1

CCV4:

CCV5:

CCV6:

CCV7:

CCV8:

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
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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	12/04/2012 15:20

J1R5J8
1211064-01 (Other Liquid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	1600	U	1600	ug/kg	4	L211246	11/28/2012	12/01/2012	8082
Aroclor 1221	1600	U	1600	ug/kg	4	L211246	11/28/2012	12/01/2012	8082
Aroclor 1232	1600	U	1600	ug/kg	4	L211246	11/28/2012	12/01/2012	8082
Aroclor 1242	1600	U	1600	ug/kg	4	L211246	11/28/2012	12/01/2012	8082
Aroclor 1248	1600	U	1600	ug/kg	4	L211246	11/28/2012	12/01/2012	8082
Aroclor 1254	1600	U	1600	ug/kg	4	L211246	11/28/2012	12/01/2012	8082
Aroclor 1260	1600	U	1600	ug/kg	4	L211246	11/28/2012	12/01/2012	8082
Aroclor 1262	1600	U	1600	ug/kg	4	L211246	11/28/2012	12/01/2012	8082
Aroclor 1268	1600	U	1600	ug/kg	4	L211246	11/28/2012	12/01/2012	8082
Surrogate: Decachlorobiphenyl	*70 %*		*10-150*			*L211246*	*11/28/2012*	*12/01/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*90 %*		*10-150*			*L211246*	*11/28/2012*	*12/01/2012*	*8082*

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	12/04/2012 15:20

J1R5J9
1211064-02 (Other Liquid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	776	U	776	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1221	776	U	776	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1232	776	U	776	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1242	776	U	776	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1248	776	U	776	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1254	776	U	776	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1260	776	U	776	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1262	776	U	776	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1268	776	U	776	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Surrogate: Decachlorobiphenyl	*50 %*		*10-150*			*L211246*	*11/28/2012*	*12/01/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*81 %*		*10-150*			*L211246*	*11/28/2012*	*12/01/2012*	*8082*

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	12/04/2012 15:20

J1R5K0
1211064-03 (Other Liquid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	775	U	775	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1221	775	U	775	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1232	775	U	775	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1242	**2590**	D	775	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1248	775	U	775	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1254	775	U	775	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1260	775	U	775	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1262	775	U	775	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Aroclor 1268	775	U	775	ug/kg	2	L211246	11/28/2012	12/01/2012	8082
Surrogate: Decachlorobiphenyl	*49 %*		*10-150*			*L211246*	*11/28/2012*	*12/01/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*96 %*		*10-150*			*L211246*	*11/28/2012*	*12/01/2012*	*8082*

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	12/04/2012 15:20

J1R5K1
1211064-04 (Other Liquid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polychlorinated Biphenyls by SW846 8082									
Aroclor 1016	399	U	399	ug/kg	1	L211246	11/28/2012	12/01/2012	8082
Aroclor 1221	399	U	399	ug/kg	1	L211246	11/28/2012	12/01/2012	8082
Aroclor 1232	399	U	399	ug/kg	1	L211246	11/28/2012	12/01/2012	8082
Aroclor 1242	399	U	399	ug/kg	1	L211246	11/28/2012	12/01/2012	8082
Aroclor 1248	399	U	399	ug/kg	1	L211246	11/28/2012	12/01/2012	8082
Aroclor 1254	399	U	399	ug/kg	1	L211246	11/28/2012	12/01/2012	8082
Aroclor 1260	399	U	399	ug/kg	1	L211246	11/28/2012	12/01/2012	8082
Aroclor 1262	399	U	399	ug/kg	1	L211246	11/28/2012	12/01/2012	8082
Aroclor 1268	399	U	399	ug/kg	1	L211246	11/28/2012	12/01/2012	8082
Surrogate: Decachlorobiphenyl	*6 % **		*10-150*			*L211246*	*11/28/2012*	*12/01/2012*	*8082*
Surrogate: Tetrachloro-meta-xylene	*72 %*		*10-150*			*L211246*	*11/28/2012*	*12/01/2012*	*8082*

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	12/04/2012 15:20

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 L211246 - SW 3580A										
Blank (L211246-BLK1)				Prepared: 11/28/2012 Analyzed: 11/30/2012						
Aroclor 1016	400	U	400	ug/kg						
Aroclor 1221	400	U	400	ug/kg						
Aroclor 1232	400	U	400	ug/kg						
Aroclor 1242	400	U	400	ug/kg						
Aroclor 1248	400	U	400	ug/kg						
Aroclor 1254	400	U	400	ug/kg						
Aroclor 1260	400	U	400	ug/kg						
Aroclor 1262	400	U	400	ug/kg						
Aroclor 1268	400	U	400	ug/kg						
Surrogate: Decachlorobiphenyl	*916*			*ug/kg*	*1000.0*		*92*	*10-150*		
Surrogate: Tetrachloro-meta-xylene	*1030*			*ug/kg*	*1000.1*		*103*	*10-150*		
LCS (L211246-BS1)				Prepared: 11/28/2012 Analyzed: 11/30/2012						
Aroclor 1016	4390		400	ug/kg	5000.0		88	50-138		
Aroclor 1260	4810		400	ug/kg	5000.0		96	50-148		
Surrogate: Decachlorobiphenyl	*977*			*ug/kg*	*1000.0*		*98*	*10-150*		
Surrogate: Tetrachloro-meta-xylene	*1040*			*ug/kg*	*1000.1*		*104*	*10-150*		
Matrix Spike (L211246-MS1)		**Source: 1211064-01**		Prepared: 11/28/2012 Analyzed: 12/01/2012						
Aroclor 1016	4860	D	1570	ug/kg	4910.6	1600 U	99	50-138		
Aroclor 1260	3850	D	1570	ug/kg	4910.6	1600 U	78	50-148		
Surrogate: Decachlorobiphenyl	*650*			*ug/kg*	*982.13*		*66*	*10-150*		
Surrogate: Tetrachloro-meta-xylene	*930*			*ug/kg*	*982.22*		*95*	*10-150*		
Matrix Spike Dup (L211246-MSD1)		**Source: 1211064-01**		Prepared: 11/28/2012 Analyzed: 12/01/2012						
Aroclor 1016	5130	D	1570	ug/kg	4901.5	1600 U	105	50-138	6	40
Aroclor 1260	4140	D	1570	ug/kg	4901.5	1600 U	84	50-148	7	40
Surrogate: Decachlorobiphenyl	*648*			*ug/kg*	*980.30*		*66*	*10-150*		
Surrogate: Tetrachloro-meta-xylene	*987*			*ug/kg*	*980.39*		*101*	*10-150*		

PREPARATION BENCH SHEET

L211246

Lionville Laboratory

Printed: 12/4/2012 2:21:51PM

Matrix: Waste **Prepared using: GC - SW 3580A** **Surrogate used: 1201397**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1211064-01	8082 PCBs	11/28/2012 11:11	1.0027	10				250	WC-Hanford, Inc.	
1211064-02	8082 PCBs	11/28/2012 11:11	1.0303	10				250	WC-Hanford, Inc.	
1211064-03	8082 PCBs	11/28/2012 11:11	1.0325	10				250	WC-Hanford, Inc.	
1211064-04	8082 PCBs	11/28/2012 11:11	1.002	10				250	WC-Hanford, Inc.	
L211246-BLK1	QC	11/28/2012 11:11	1	10				250		
L211246-BS1	QC	11/28/2012 11:11	1	10	1200902		250	250		
L211246-MS1	QC	11/28/2012 11:11	1.0182	10	1200902	1211064-01	250	250		
L211246-MSD1	QC	11/28/2012 11:11	1.0201	10	1200902	1211064-01	250	250		

Revision for prep date, initial wt. 1211064-04 RGG 12/4/12

Extracts Relinquished By Date Extracts Received By Date

PREPARATION BENCH SHEET

L211246

Lionville Laboratory

Printed: 11/30/2012 1:40:49PM

00000019

Matrix: Waste **Prepared using: GC - SW 3580A** **Surrogate used: 1201397**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1211064-01	8082 PCBs	11/29/2012 11:11	1.0027	10				250	WC-Hanford, Inc.	
1211064-02	8082 PCBs	11/29/2012 11:11	1.0303	10				250	WC-Hanford, Inc.	
1211064-03	8082 PCBs	11/29/2012 11:11	1.0325	10				250	WC-Hanford, Inc.	
1211064-04	8082 PCBs	11/29/2012 11:11	1.0042	10				250	WC-Hanford, Inc.	
L211246-BLK1	QC	11/29/2012 11:11	1	10				250		
L211246-BS1	QC	11/29/2012 11:11	1	10	1200902		250	250		
L211246-MS1	QC	11/29/2012 11:11	1.0182	10	1200902	1211064-01	250	250		
L211246-MSD1	QC	11/29/2012 11:11	1.0201	10	1200902	1211064-01	250	250		

Soleaned 11.30.12
SZ
Cu lot # B10X036

11/30/12 1340
Extracts Relinquished By Date

S Lah 11.30.12 14:00
Extracts Received By Date

METALS

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-042 Project Number: K4029 Project Manager: Joan Kessner	**Reported:** 11/30/2012 10:26

Analytical Report for Metals by SW846 6000/7000 series

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1R5J8	1211064-01	Other Liquid	11/14/2012 09:48	11/15/2012 16:00
J1R5J9	1211064-02	Other Liquid	11/14/2012 09:53	11/15/2012 16:00
J1R5K0	1211064-03	Other Liquid	11/14/2012 09:59	11/15/2012 16:00
J1R5K1	1211064-04	Other Liquid	11/14/2012 10:06	11/15/2012 16:00

LIONVILLE LABORATORY
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-042
LVL#: 1211064
SDG/SAF#: K4029/RC-042

W.O.#: 60049-001-001-0001-00
Date Received: 11-15-12

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 4 other liquid samples.

2. The samples were prepared and analyzed in accordance with methods listed on the data report forms. The samples were reported on a wet weight, 'as-received' basis.

3. All analyses were performed within the required holding times.

4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvL'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. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation, samples were greater than 20X MB value}.

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) recovery for 1 analyte was outside the 75-125% control limits.

11. For analytes where the MS is out of control, a post-digestion MS (PDS) is performed. A PDS was prepared at meaningful concentration level for the following analyte: Lead.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of pages.

12. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. The ± 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

11/29/12
Date

alm/11-064

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

WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2012 10:26

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

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2012 10:26

J1R5J8
1211064-01 (Other Liquid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Arsenic	0.962	U	0.962	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Barium	**3.70**		0.481	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Beryllium	0.192	U	0.192	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Cadmium	**2.49**		0.192	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Chromium	**0.244**		0.192	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Lead	**2300**		0.481	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Selenium	**4.53**		0.962	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Silver	0.192	U	0.192	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Mercury	0.0273	U	0.0273	mg/kg	1	L211201	11/26/2012	11/28/2012	7471A

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2012 10:26

J1R5J9
1211064-02 (Other Liquid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Arsenic	0.926	U	0.926	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Barium	**0.731**		0.463	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Beryllium	0.185	U	0.185	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Cadmium	**0.0735**	B	0.185	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Chromium	**2.69**		0.185	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Lead	**1.67**		0.463	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Selenium	**0.944**		0.926	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Silver	0.185	U	0.185	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Mercury	0.0290	U	0.0290	mg/kg	1	L211201	11/26/2012	11/28/2012	7471A

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2012 10:26

J1R5K0

1211064-03 (Other Liquid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Arsenic	**0.340**	B	0.962	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Barium	**0.404**	B	0.481	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Beryllium	0.192	U	0.192	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Cadmium	**1.36**		0.192	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Chromium	0.192	U	0.192	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Lead	**294**		0.481	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Selenium	**0.965**		0.962	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Silver	0.192	U	0.192	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Mercury	0.0290	U	0.0290	mg/kg	1	L211201	11/26/2012	11/28/2012	7471A

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2012 10:26

J1R5K1
1211064-04 (Other Liquid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Arsenic	0.595	U	0.595	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Barium	**0.184**	B	0.298	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Beryllium	0.119	U	0.119	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Cadmium	0.119	U	0.119	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Chromium	0.119	U	0.119	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Lead	0.298	U	0.298	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Selenium	0.595	U	0.595	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Silver	0.119	U	0.119	mg/kg	1	L211196	11/26/2012	11/29/2012	6010B
Mercury	0.0136	U	0.0136	mg/kg	1	L211201	11/26/2012	11/28/2012	7471A

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2012 10:26

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 L211196 - SW 3050B										
Blank (L211196-BLK1)				Prepared: 11/26/2012 Analyzed: 11/29/2012						
Arsenic	0.943	U	0.943	mg/kg						
Barium	0.472	U	0.472	mg/kg						
Beryllium	0.189	U	0.189	mg/kg						
Cadmium	0.189	U	0.189	mg/kg						
Chromium	0.189	U	0.189	mg/kg						
Lead	0.472	U	0.472	mg/kg						
Selenium	0.943	U	0.943	mg/kg						
Silver	0.189	U	0.189	mg/kg						
Duplicate (L211196-DUP1)		**Source: 1211064-01**		Prepared: 11/26/2012 Analyzed: 11/29/2012						
Arsenic	0.862	U	0.862	mg/kg		0.962 U				20
Barium	3.73		0.431	mg/kg		3.70			0.7	20
Beryllium	0.172	U	0.172	mg/kg		0.192 U				20
Cadmium	2.55		0.172	mg/kg		2.49			2	20
Chromium	0.230		0.172	mg/kg		0.244			6	20
Lead	2340		0.431	mg/kg		2300			2	20
Selenium	4.41		0.862	mg/kg		4.53			3	20
Silver	0.172	U	0.172	mg/kg		0.192 U				20
Matrix Spike (L211196-MS1)		**Source: 1211064-01**		Prepared: 11/26/2012 Analyzed: 11/29/2012						
Arsenic	165		0.893	mg/kg	178.57	0.962 U	93	75-125		
Barium	183		0.446	mg/kg	178.57	3.70	100	75-125		
Beryllium	4.36		0.179	mg/kg	4.4643	0.192 U	98	75-125		
Cadmium	6.74		0.179	mg/kg	4.4643	2.49	95	75-125		
Chromium	17.3		0.179	mg/kg	17.857	0.244	96	75-125		
Lead	2230		0.446	mg/kg	44.643	2300	-142*	75-125		
Selenium	183		0.893	mg/kg	178.57	4.53	100	75-125		
Silver	4.22		0.179	mg/kg	4.4643	0.192 U	95	75-125		

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WC-Hanford, Inc.	Project: RC-042	
2620 Fermi Avenue	Project Number: K4029	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/30/2012 10:26

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 L211196 - SW 3050B										
Post Spike (L211196-PS1)		**Source: 1211064-01**		Prepared: 11/26/2012 Analyzed: 11/29/2012						
Lead	26700			ug/L	2600.0	23900	108	75-125		
Reference (L211196-SRM1)				Prepared: 11/26/2012 Analyzed: 11/29/2012						
Arsenic	118		2.94	mg/kg	114.00		104	82.8-117.54		
Barium	331		1.47	mg/kg	307.00		108	79.8-120.2		
Beryllium	109		0.588	mg/kg	108.00		101	82.8-117.6		
Cadmium	237		0.588	mg/kg	225.00		105	83.6-116.4		
Chromium	85.4		0.588	mg/kg	77.200		111	73.3-126.4		
Lead	196		1.47	mg/kg	190.00		103	81.6-118.4		
Selenium	197		2.94	mg/kg	187.00		105	75.9-124.6		
Silver	81.9		0.588	mg/kg	83.500		98	82.7-117.1		
Batch L211201 - SW 7471A Prep										
Blank (L211201-BLK1)				Prepared: 11/26/2012 Analyzed: 11/28/2012						
Mercury	0.0290	U	0.0290	mg/kg						
Duplicate (L211201-DUP1)		**Source: 1211064-01**		Prepared: 11/26/2012 Analyzed: 11/28/2012						
Mercury	0.0257	U	0.0257	mg/kg		0.0273 U				20
Matrix Spike (L211201-MS1)		**Source: 1211064-01**		Prepared: 11/26/2012 Analyzed: 11/28/2012						
Mercury	0.140		0.0257	mg/kg	0.14286	0.0273 U	97.7	75-125		
Reference (L211201-SRM1)				Prepared: 11/26/2012 Analyzed: 11/28/2012						
Mercury	1.25		0.0257	mg/kg	1.2900		96.6	62.6-138		

Lionville Laboratory Logbook #: 1154

SAMPLE DIGESTION RECORD

Digestion Batch #: L21196
Date/Time Initiated: 11/26/12 1130
Date/Time Completed: 11/27/12 1820
Analyst: MW
Matrix (circle): Soil Water Other oil
Method (circle one): 3005A 3010A 3050 200.7 (1994)
pH/Turbidity: N/A for Solids.

Digested / Undigested (circle one)
Balance #: B14
Balance Cal Verification: Y NA
Temp: 94°
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
121064-01		0.52	50		TO	smooth	amber oil		
L21196-DUP1		0.58	50						
MS1	0.5	0.50	50						
121064-02		0.54	50			smooth	brown oil		
03		0.52	50			smooth	dark amber oil		
04		0.54	50			liquid	stained aqueous (?)		
L21196-BLK1		0.53	50			coarse	boiling chips		
SRM1	*	0.51	50			fine	pink sandy		

MW 11/26/12

Spiking IDs / Expiration Date:
MS# : 1201377

LCS#: 1201014 *

Reagent IDs:
HNO_3 0000003390
HCl L13029
H_2O_2 L11A03
1:1 HNO_3 637-076-07
1:1 HCl

File ID#:

Data Review By/Date: 11/29/12

R:\group\QA\SOP\
Signed\SPI\Metals Digestion log.doc

Page #:

PREPARATION BENCH SHEET

L211196

Lionville Laboratory

Printed: 11/30/2012 9:29:21AM

Matrix: Waste **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
1211064-01	6010B HSL Metals	11/26/2012 11:30	0.52	50					WC-Hanford, Inc.	As, Ba, Be, Cd, Cr, Pb, Se, Ag
1211064-02	6010B HSL Metals	11/26/2012 11:30	0.54	50					WC-Hanford, Inc.	As, Ba, Be, Cd, Cr, Pb, Se, Ag
1211064-03	6010B HSL Metals	11/26/2012 11:30	0.52	50					WC-Hanford, Inc.	As, Ba, Be, Cd, Cr, Pb, Se, Ag
1211064-04	6010B HSL Metals	11/26/2012 11:30	0.84	50					WC-Hanford, Inc.	As, Ba, Be, Cd, Cr, Pb, Se, Ag
L211196-BLK1	QC	11/26/2012 11:30	0.53	50						
L211196-DUP1	QC	11/26/2012 11:30	0.58	50		1211064-01				
L211196-MS1	QC	11/26/2012 11:30	0.56	50	1201377	1211064-01	500			
L211196-PS1	QC	11/26/2012 11:30	0.52	50	1001493	1211064-01	100			
L211196-SRM1	QC	11/26/2012 11:30	0.51	50	1201014		510			

revision correction time/date and post spike. QEM 11/30/12

Extracts Relinquished By Date

Extracts Received By Date

PREPARATION BENCH SHEET

L211196

Lionville Laboratory

Printed: 11/27/2012 7:56:18PM

Matrix: Waste **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
1211064-01	6010B HSL Metals	11/27/2012 11:08	0.52	50					WC-Hanford, Inc.	As, Ba, Be, Cd, Cr, Pb, Se, Ag
1211064-02	6010B HSL Metals	11/27/2012 11:08	0.54	50					WC-Hanford, Inc.	As, Ba, Be, Cd, Cr, Pb, Se, Ag
1211064-03	6010B HSL Metals	11/27/2012 11:08	0.52	50					WC-Hanford, Inc.	As, Ba, Be, Cd, Cr, Pb, Se, Ag
1211064-04	6010B HSL Metals	11/27/2012 11:08	0.84	50					WC-Hanford, Inc.	As, Ba, Be, Cd, Cr, Pb, Se, Ag
L211196-BLK1	QC	11/27/2012 11:08	0.53	50						
L211196-DUP1	QC	11/27/2012 11:08	0.58	50		1211064-01				
L211196-MS1	QC	11/27/2012 11:08	0.56	50	1201377	1211064-01	500			
L211196-PS1	QC	11/27/2012 11:08	0.5	50						
L211196-SRM1	QC	11/27/2012 11:08	0.51	50	1201014		510			

Extracts Relinquished By — Date: 11/27/12

Extracts Received By — Date: 11/28/12

Lionville Laboratory

MERCURY PREPARATION

Logbook # 1153

Analyst: [illegible]
Date 11/26/12 – 11/27/12
Start Time/Temp: 1350/94°
End Time/Temp: 1420/95°

Instrument ID: HG3.1
Balance # B14 /NA
Pipette Calibration (Daily) (Y)

Prep Batch: L211201
Worksheet: HG112801
SOP No. ME-HgCVAA
BLOCK 1 (3) 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				10 ml	50	
0.2 µg/L		0.100		10 ml	50	
1.0 µg/L		0.500		10 ml	50	
2.0 µg/L		1.000		10 ml	50	
5.0 µg/L		2.500		10 ml	50	
10.0 µg/L		5.000		10 ml	50	
ICV		0.125	2.5	10 ml	50	
CCV		0.250	5.0	10 ml	50	
ICB/CCB				10 ml	50	
L211201-BK4				0.31	50	
SRM1		(*)	(*)	0.35	50	
1211064-01				0.33	50	
L211201-DP1				0.35	50	
MS1		0.500	1.0	0.35	50	
1211064-02				0.31	50	
03				0.31	50	
04				0.66	50	aqueous (?)

[illegible] 11/26/12

Standard:	ID	Prep Date/Time
ICAL/MS	RI 1201235	11/27/12 1105
ICV/CCV/LCS	(I.V. 1201411)	N/A

Soil LCS True Value = 1.29 mg/Kg
Standard # 1201014

Reviewed By/Date: [illegible] 11/29/12

se book # 1153 for std traceability information

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

ME-HgCVAA-Prep0910

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