0098347

SAF-RC-029
Remaining Sites Confirmation Sampling – Soil Full Protocol
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 7/26/11
INITIAL/DATE

COMMENTS:

SDG K3476 SAF RC-029

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

Waste Site: 100-N-84:1

RECEIVED
AUG 22 2011
EDMC

LVL
Lionville Laboratory
A division of Eberline Analytical Corporation

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

21 July 2011

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

RECEIVED
JUL 2011

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 #	1107039
SDG #	K3476
SAF #	RC-029
Date Received	07/08/11
# Samples	1
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
PAHs	X
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

LVL
LIONVILLE LABORATORY
A division of Fiberline Analytical Corporation

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

WC-Hanford, Inc.	Project: RC-029	
2620 Fermi Avenue	Project Number: K3476	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	07/19/2011 20:46

Analytical Report for Polychlorinated Biphenyls by SW846 8082

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1JD94	1107039-01	Soil	07/06/2011 13:30	07/08/2011 10:00

LIONVILLE LABORATORIES
A division of Eberline Analytical Corporation

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

Case Narrative

Client: WC-HANFORD RC-029 K3476
LVL #: 1107039

W.O. #: 60049-001-001-0001-00
Received: 07-08-2011

PCBs

One (1) soil sample was collected on 07-06-2011.

The sample and associated QC samples were extracted 07-14-2011 and analyzed 07-18,19-2011 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 a sample that met LvL's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. All obtainable surrogate recoveries were within acceptance criteria.
4. The method blank was below the reporting limits for all target compounds.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. The sample was 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

7/21/11
Date

r:\group\data\2011\pcb\wc hanford\1107039jes.doc

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 10 pages.

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.

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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

WC-Hanford, Inc.	Project: RC-029	
2620 Fermi Avenue	Project Number: K3476	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	07/19/2011 20:46

J1JD94
1107039-01 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082								
Aroclor 1016	13.8 U	13.8	ug/kg dry	1	L107128	07/14/2011	07/18/2011	8082
Aroclor 1221	13.8 U	13.8	ug/kg dry	1	L107128	07/14/2011	07/18/2011	8082
Aroclor 1232	13.8 U	13.8	ug/kg dry	1	L107128	07/14/2011	07/18/2011	8082
Aroclor 1242	13.8 U	13.8	ug/kg dry	1	L107128	07/14/2011	07/18/2011	8082
Aroclor 1248	13.8 U	13.8	ug/kg dry	1	L107128	07/14/2011	07/18/2011	8082
Aroclor 1254	**13.2 J**	13.8	ug/kg dry	1	L107128	07/14/2011	07/18/2011	8082
Aroclor 1260	**6.27 J**	13.8	ug/kg dry	1	L107128	07/14/2011	07/18/2011	8082
Aroclor 1262	13.8 U	13.8	ug/kg dry	1	L107128	07/14/2011	07/18/2011	8082
Aroclor 1268	13.8 U	13.8	ug/kg dry	1	L107128	07/14/2011	07/18/2011	8082
Surrogate: Decachlorobiphenyl	*89 %*	*43-144*			*L107128*	*07/14/2011*	*07/18/2011*	*8082*
Surrogate: Tetrachloro-meta-xylene	*95 %*	*52-141*			*L107128*	*07/14/2011*	*07/18/2011*	*8082*

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WC-Hanford, Inc.	Project: RC-029	
2620 Fermi Avenue	Project Number: K3476	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	07/19/2011 20:46

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 L107128 - SW 3540C									
Blank (L107128-BLK2)			Prepared: 07/14/2011 Analyzed: 07/18/2011						
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						
Aroclor 1262	13.3 U	13.3	ug/kg wet						
Aroclor 1268	13.3 U	13.3	ug/kg wet						
Surrogate: Decachlorobiphenyl	*26.3*		*ug/kg wet*	*33.333*		*79*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*31.9*		*ug/kg wet*	*33.337*		*96*	*52-141*		
LCS (L107128-BS2)			Prepared: 07/14/2011 Analyzed: 07/18/2011						
Aroclor 1016	125	13.3	ug/kg wet	166.67		75	50-138		40
Aroclor 1260	135	13.3	ug/kg wet	166.67		81	50-148		40
Surrogate: Decachlorobiphenyl	*28.0*		*ug/kg wet*	*33.333*		*84*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*32.4*		*ug/kg wet*	*33.337*		*97*	*52-141*		
Matrix Spike (L107128-MS1)		**Source: 1107039-01**	Prepared: 07/14/2011 Analyzed: 07/18/2011						
Aroclor 1016	126	13.8	ug/kg dry	172.43	13.8 U	73	50-138		40
Aroclor 1260	134	13.8	ug/kg dry	172.43	6.27	74	50-148		40
Surrogate: Decachlorobiphenyl	*27.9*		*ug/kg dry*	*34.486*		*81*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*30.6*		*ug/kg dry*	*34.489*		*89*	*52-141*		
Matrix Spike Dup (L107128-MSD1)		**Source: 1107039-01**	Prepared: 07/14/2011 Analyzed: 07/19/2011						
Aroclor 1016	122	13.7	ug/kg dry	171.98	13.8 U	71	50-138	3	40
Aroclor 1260	140	13.7	ug/kg dry	171.98	6.27	77	50-148	4	40
Surrogate: Decachlorobiphenyl	*17.0*		*ug/kg dry*	*34.395*		*49*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*26.0*		*ug/kg dry*	*34.399*		*76*	*52-141*		

PREPARATION BENCH SHEET

L107128

Lionville Laboratory

Printed: 7/15/2011 3:07:42PM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 110107**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1107039-01	8081A TCL Pesticides	07/14/2011 11:42	30.17	10				250	WC-Hanford, Inc.	Added for BatchQC in: L107128
1107039-01	8082 PCBs	07/14/2011 11:42	30.17	10				250	WC-Hanford, Inc.	
1107040-02	8082 PCBs	07/14/2011 11:42	30.08	10				250	WC-Hanford, Inc.	
1107040-03	8081A TCL Pesticides	07/14/2011 11:42	30.19	10				250	WC-Hanford, Inc.	Added for BatchQC in: L107128
1107040-03	8082 PCBs	07/14/2011 11:42	30.19	10				250	WC-Hanford, Inc.	
1107044-02	8081A TCL Pesticides	07/14/2011 11:42	30.35	10				250	WC-Hanford, Inc.	
1107044-02	8082 PCBs	07/14/2011 11:42	30.35	10				250	WC-Hanford, Inc.	
1107044-03	8081A TCL Pesticides	07/14/2011 11:42	30.4	10				250	WC-Hanford, Inc.	
1107044-03	8082 PCBs	07/14/2011 11:42	30.4	10				250	WC-Hanford, Inc.	
1107071-01	8081A TCL Pesticides	07/14/2011 11:42	30.54	10				250	WC-Hanford, Inc.	
1107071-01	8082 PCBs	07/14/2011 11:42	30.54	10				250	WC-Hanford, Inc.	
L107128-BLK1	QC	07/14/2011 11:42	30	10				250		PEST
L107128-BLK2	QC	07/14/2011 11:42	30	10				250		PCB
L107128-BS1	QC	07/14/2011 11:42	30	10	1101055		250	250		PEST
L107128-BS2	QC	07/14/2011 11:42	30	10	1100908		250	250		PCB
L107128-MS1	QC	07/14/2011 11:42	30.29	10	1100908	1107039-01	250	250		PCB
L107128-MS2	QC	07/14/2011 11:42	15.61	10	1100908	1107040-03	250	250		PCB
L107128-MS3	QC	07/14/2011 11:42	30.71	10	1101055	1107044-02	250	250		PEST
L107128-MS4	QC	07/14/2011 11:42	30.12	10	1100908	1107044-02	250	250		PCB
L107128-MS5	QC	07/14/2011 11:42	30.26	10	1101055	1107071-01	250	250		PEST

S cleaned 07.18.11 SZ

7/15/11 15:50 — Extracts Relinquished By — Date

S Zak 07.15.11 15:55 — Extracts Received By — Date

PREPARATION BENCH SHEET

L107128

Lionville Laboratory

Printed: 7/15/2011 3:07:42PM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1101071**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
L107128-MS6	QC	07/14/2011 11:42	30	10	1100908	1107071-01	250	250		PCB
L107128-MSD1	QC	07/14/2011 11:42	30.37	10	1100908	1107039-01	250	250		PCB
L107128-MSD2	QC	07/14/2011 11:42	15.2	10	1100908	1107040-03	250	250		PCB
L107128-MSD3	QC	07/14/2011 11:42	30.44	10	1101055	1107044-02	250	250		PEST
L107128-MSD4	QC	07/14/2011 11:42	30.76	10	1100908	1107044-02	250	250		PCB
L107128-MSD5	QC	07/14/2011 11:42	30.16	10	1101055	1107071-01	250	250		PEST
L107128-MSD6	QC	07/14/2011 11:42	30	10	1100908	1107071-01	250	250		PCB

S cleaned 07.18.11 SZ

7/15/11 15:58
Extracts Relinquished By Date

S Zak 07.15.11 15:5
Extracts Received By Date

Lionville Laboratory Use Only

1107 039

Custody Transfer Record/Lab Work Request

Page 1 of 1

Lionville Laboratory
A Division of Eberline Analytical Corporation

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC Hanford SAF# RC.029
Est. Final Proj. Sampling Date:
Project#:
Project Contact/Phone#:
Lionville Laboratory Project Manager: O. Johnson
QC: SW Del: STN TAT: 15 days

Date Rec'd: 7-8-11 Date Due: 7-23-11

		A		B		C
Refrigerator #		2		2		2
#/Type Container	Liquid					
	Solid	1AG		1AG		1
Volume	Liquid					
	Solid	120		120		60
Preservatives		–		–		–

ANALYSES REQUESTED →

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	PAHs			INORG Metal Hg	CN								
								Lionville Laboratory Use Only																
										8082		8310 PAH			Met									
W Water	01	JJJD94	/	/	Soil	7-6-11	1330			X		X			X									
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																								

Special Instructions:

Special Instructions:

1.
2.
3.
4.
5. See SRS
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	7/8/11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

1 of 1

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-111	Page 1 of 1 BH 7/6/11

Collector: RM Berven	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Soil Full Protocol	Sampling Location: 100-N-84:1		SAF No.: RC-029
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1601-05	COA: C10NPLA000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A100776		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

None BH 7/6/11

Special Handling and/or Storage

Cool 4C BH 7/6/11

Preservation			Cool 4C	Cool 4C	Cool 4C							
Type of Container			G/P	aG	aG							
No. of Container(s)			1	1	1							
Volume			60mL	120mL	120mL							
SAMPLE ANALYSIS			See item (1) in Special Instructions.	PAHs - 8310	PCBs - 8082							
Sample No.	Matrix *	Sample Date	Sample Time									
J1JD94	SOIL	7/6/11	1330	x	x	x						
~~J1JD95~~	SOIL											
~~J1JD96~~	SOIL											
~~J1JD97~~	SOIL											
~~J1JD98~~ BH 7/6/11	SOIL											

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: RC Berven	Date/Time: 1415 7-6-11	Received By/Stored In: BHudson BHudson	Date/Time: 1415 7/6/11
Relinquished By/Removed From: BHudson BHudson	Date/Time: 1510 7/6/11	Received By/Stored In: 1060, #1 A. Freier A. Freier	Date/Time: 7-6-11 1510
Relinquished By/Removed From: WCH 1060, #1 A. Freier A. Freier	Date/Time: 1100 7-7-11	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 7-8-11 1000	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 7-8-11 1000
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) 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)

REVIEWED BY DATE 7-7-11

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
Vs=Vegetation
X=Other

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

WCH-EE-011

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford
Project/SAF/SOW/Release #: RC-029

Date: 7/8/11

LvL Batch #: 1107039

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7949 4874 1170
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 4.3°	°C	Cooler # AFS-04-052
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 7-8-11
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 _____	

000000010

SR-002-B.doc

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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

WC-Hanford, Inc.	Project: RC-029	
2620 Fermi Avenue	Project Number: K3476	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	07/20/2011 16:54

Analytical Report for Polynuclear Aromatic Compounds by SW846 8310

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1JD94	1107039-01	Soil	07/06/2011 13:30	07/08/2011 10:00

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

Case Narrative

Client: WC-HANFORD RC-029 K3476
LVL #: 1107039

W.O. #: 60049-001-001-0001-00
Date Received: 07-08-2011

POLYNUCLEAR AROMATIC HYDROCARBONS (PAH)

One (1) soil sample was collected on 07-06-2011.

The sample and associated QC samples were extracted 07-12-2011 and analyzed 07-18,20-2011 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 a sample that met LvL's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. Three (3) of five (5) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#11GC134) 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. Thirty-two (32) of thirty-two (32) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#11GC134) has been enclosed.
7. The sample J1JD94 and its associated MS2/MSD2 required a 500-fold dilution, due to high concentrations of target analytes. 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 sample was reported on a dry weight basis.

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 12 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 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

7/21/11
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 11GC134

Initiator: L. Kauffman
Date: 7-20-2011
Client: WC Hanford RC-029

Batch: 1107039
Samples: All
Method: SW846/MCAWW/CLP/

Parameter: PAH
Matrix: Soil
Prep Batch: L107105

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)

3 of 5 Surrogate recoveries were outside the acceptance range.

32 of 32 Matrix spike recoveries were outside the acceptance range.

2. Known or Probable Causes(s)

High dilution of samples due to high concentration of target analytes. (500X)

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, J.D. 7/21/11

4. Project Manager Instructions...signature/date: 7/21/11

✓ 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: Sandra / 7-21-11 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 diposition.

Route
X Lab Manager: Daniels
X 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

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.

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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-029 Project Number: K3476 Project Manager: Joan Kessner	**Reported:** 07/20/2011 16:54

J1JD94

1107039-01 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Polynuclear Aromatic Compounds by SW846 8310									
Naphthalene	3430	U	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Acenaphthylene	**21500**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Acenaphthene	**108000**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Fluorene	3430	U	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Phenanthrene	**81400**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Anthracene	**24600**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Fluoranthene	**261000**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Indeno[1,2,3-cd]pyrene	**12400**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Pyrene	**197000**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Benz[a]anthracene	**12400**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Chrysene	**96200**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Benzo[b] fluoranthene	**25200**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Benzo[k] fluoranthene	**15400**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Benzo[a] pyrene	**36200**	D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Dibenz[a,h]anthracene	**3250**	J, D	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Benzo[g,h,i] perylene	3430	U	3430	ug/kg dry	500	L107105	07/12/2011	07/20/2011	8310
Surrogate: Triphenylene	*10900 % **		*68-129*			*L107105*	*07/12/2011*	*07/20/2011*	*8310*

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-029 Project Number: K3476 Project Manager: Joan Kessner	Reported: 07/20/2011 16:54

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 L107105 - SW 3540C									
Blank (L107105-BLK1)			Prepared: 07/12/2011 Analyzed: 07/18/2011						
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						
Surrogate: Triphenylene	*145*		*ug/kg wet*	*166.67*		*87*	*68-129*		
LCS (L107105-BS1)			Prepared: 07/12/2011 Analyzed: 07/18/2011						
Naphthalene	124	3.33	ug/kg wet	166.67		74	0-127		40
Acenaphthylene	127	3.33	ug/kg wet	166.67		76	50-140		40
Acenaphthene	124	3.33	ug/kg wet	166.67		74	17-139		40
Fluorene	131	3.33	ug/kg wet	166.67		79	28-145		40
Phenanthrene	131	3.33	ug/kg wet	166.67		79	30-152		40
Anthracene	148	3.33	ug/kg wet	166.67		89	19-171		40
Fluoranthene	143	3.33	ug/kg wet	166.67		86	34-159		40
Indeno[1,2,3-cd]pyrene	144	3.33	ug/kg wet	166.67		86	31-156		40
Pyrene	130	3.33	ug/kg wet	166.67		78	33-152		40
Benz[a]anthracene	148	3.33	ug/kg wet	166.67		89	32-157		40
Chrysene	140	3.33	ug/kg wet	166.67		84	31-159		40
Benzo[b] fluoranthene	131	3.33	ug/kg wet	166.67		79	33-164		40
Benzo[k] fluoranthene	138	3.33	ug/kg wet	166.67		83	28-161		40
Benzo[a] pyrene	132	3.33	ug/kg wet	166.67		79	29-149		40
Dibenz[a,h]anthracene	138	3.33	ug/kg wet	166.67		83	27-153		40
Benzo[g,h,i] perylene	133	3.33	ug/kg wet	166.67		80	32-157		40
Surrogate: Triphenylene	*151*		*ug/kg wet*	*166.67*		*91*	*68-129*		

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WC-Hanford, Inc.	Project: RC-029	
2620 Fermi Avenue	Project Number: K3476	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	07/20/2011 16:54

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 L107105 - SW 3540C										
Matrix Spike (L107105-MS2)		**Source: 1107039-01**		Prepared: 07/12/2011 Analyzed: 07/20/2011						
Naphthalene	101000	D	3400	ug/kg dry	169.96	3430 U	59500*	0-127		40
Acenaphthylene	10400	D	3400	ug/kg dry	169.96	21500	-6500*	50-140		40
Acenaphthene	68000	D	3400	ug/kg dry	169.96	108000	-23600*	17-139		40
Fluorene	3400	U	3400	ug/kg dry	169.96	3430 U	*	28-145		40
Phenanthrene	60300	D	3400	ug/kg dry	169.96	81400	-12500*	30-152		40
Anthracene	16900	D	3400	ug/kg dry	169.96	24600	-4500*	19-171		40
Fluoranthene	200000	D	3400	ug/kg dry	169.96	261000	-35600*	34-159		40
Indeno[1,2,3-cd]pyrene	9650	D	3400	ug/kg dry	169.96	12400	-1620*	31-156		40
Pyrene	135000	D	3400	ug/kg dry	169.96	197000	-36200*	33-152		40
Benz[a]anthracene	73100	D	3400	ug/kg dry	169.96	12400	35700*	32-157		40
Chrysene	66900	D	3400	ug/kg dry	169.96	96200	-17200*	31-159		40
Benzo[b] fluoranthene	18300	D	3400	ug/kg dry	169.96	25200	-4070*	33-164		40
Benzo[k] fluoranthene	11600	D	3400	ug/kg dry	169.96	15400	-2220*	28-161		40
Benzo[a] pyrene	24900	D	3400	ug/kg dry	169.96	36200	-6600*	29-149		40
Dibenz[a,h]anthracene	2350	J, D	3400	ug/kg dry	169.96	3250	-526*	27-153		40
Benzo[g,h,i] perylene	29800	D	3400	ug/kg dry	169.96	3430 U	17600*	32-157		40
Surrogate: Triphenylene	*17300*			*ug/kg dry*	*169.96*		*10200**	*68-129*		
Matrix Spike Dup (L107105-MSD2)		**Source: 1107039-01**		Prepared: 07/12/2011 Analyzed: 07/20/2011						
Naphthalene	107000	D	3430	ug/kg dry	171.75	3430 U	62300*	0-127	5	40
Acenaphthylene	12900	D	3430	ug/kg dry	171.75	21500	-4980*	50-140	-27	40
Acenaphthene	98100	D	3430	ug/kg dry	171.75	108000	-5840*	17-139	-121	40
Fluorene	4920	D	3430	ug/kg dry	171.75	3430 U	2870*	28-145		40
Phenanthrene	109000	D	3430	ug/kg dry	171.75	81400	16200*	30-152	1530*	40
Anthracene	39400	D	3430	ug/kg dry	171.75	24600	8640*	19-171	635*	40
Fluoranthene	287000	D	3430	ug/kg dry	171.75	261000	15200*	34-159	-497	40
Indeno[1,2,3-cd]pyrene	3430	U	3430	ug/kg dry	171.75	12400	-7220*	31-156	-127	40
Pyrene	3430	U	3430	ug/kg dry	171.75	197000	114000*	33-152	-104	40
Benz[a]anthracene	3430	U	3430	ug/kg dry	171.75	12400	-7220*	32-157	301*	40
Chrysene	3430	U	3430	ug/kg dry	171.75	96200	-56000*	31-159	-106	40
Benzo[b] fluoranthene	3430	U	3430	ug/kg dry	171.75	25200	-14700*	33-164	-113	40
Benzo[k] fluoranthene	3430	U	3430	ug/kg dry	171.75	15400	-8970*	28-161	-121	40
Benzo[a] pyrene	3430	U	3430	ug/kg dry	171.75	36200	-21100*	29-149	-105	40
Dibenz[a,h]anthracene	3430	U	3430	ug/kg dry	171.75	3250	-1890*	27-153	-113	40
Benzo[g,h,i] perylene	3430	U	3430	ug/kg dry	171.75	3430 U	*	32-157		40
Surrogate: Triphenylene	*0.00*	*U*		*ug/kg dry*	*171.75*		*	*68-129*		

PREPARATION BENCH SHEET

L107105

Lionville Laboratory

Seq 1070061

Printed: 7/18/2011 12:43:47PM

000000009

Matrix: Solid **Prepared using: HPLC - SW 3540C** **Surrogate used: 1100442**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1107029-01	8310 PAH	07/12/2011 21:17	30.25	5				50	WC-Hanford, Inc.	
1107029-02	8310 PAH	07/12/2011 21:17	30.16	5				50	WC-Hanford, Inc.	
1107029-03	8310 PAH	07/12/2011 21:17	30.48	5				50	WC-Hanford, Inc.	
1107029-04	8310 PAH	07/12/2011 21:17	30.53	5				50	WC-Hanford, Inc.	
1107029-05	8310 PAH	07/12/2011 21:17	30.19	5				50	WC-Hanford, Inc.	
1107029-06	8310 PAH	07/12/2011 21:17	30.07	5				50	WC-Hanford, Inc.	
1107029-07	8310 PAH	07/12/2011 21:17	30.37	5				50	WC-Hanford, Inc.	
1107039-01	8310 PAH	07/12/2011 21:17	30.43	10				50	WC-Hanford, Inc.	
1107040-02	8310 PAH	07/12/2011 21:17	30.51	5				50	WC-Hanford, Inc.	
1107040-03	8310 PAH	07/12/2011 21:17	30.63	5				50	WC-Hanford, Inc.	
L107105-BLK1	QC	07/12/2011 21:17	30	5				50		
L107105-BS1	QC	07/12/2011 21:17	30	5	1100443		50	50		
L107105-MS1	QC	07/12/2011 21:17	30.59	5	1100443	1107029-07	50	50		
L107105-MS2	QC	07/12/2011 21:17	30.73	10	1100443	1107039-01	50	50		
L107105-MS3	QC	07/12/2011 21:17	30.61	5	1100443	1107040-02	50	50		
L107105-MSD1	QC	07/12/2011 21:17	30.42	5	1100443	1107029-07	50	50		
L107105-MSD2	QC	07/12/2011 21:17	30.41	10	1100443	1107039-01	50	50		
L107105-MSD3	QC	07/12/2011 21:17	30.62	5	1100443	1107040-02	50	50		

Extracts Relinquished By — Date 7/18/11 1315

Extracts Received By — Date 7-18-11

Lionville Laboratory Use Only
1107 039

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Lionville Laboratory
A Division of Eberline Analytical Corporation

000000010

Client WC Hanford SAF# RC.029

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager O. Johnson

QC SW Del STN TAT 15 days

Date Rec'd 7-8-11 Date Due 7-23-11

		A	B	C
Refrigerator #		2	2	2
#/Type Container	Liquid			
	Solid	1AG	1AG	1
Volume	Liquid			
	Solid	120	120	60
Preservatives		–	–	–
ANALYSES REQUESTED →		ORGANIC: VOA, BNA, ~~Pest~~/PCB, Herb	PAHs	INORG: Metal, ~~Hg~~, CN

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8082	8310 PAH	Met
01	J1JD94		✓	Soil	7-6-11	1330	X	X	X

MATRIX CODES:
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

Special Instructions:

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

See SRC

Relinquished by	Received by	Date	Time
[signature]	[signature]	7/8/11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

1 of 1

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-111	Page 1 of 1 BH 7/6/11

Collector RM Berven	Company Contact Matt Perrott	Telephone No. 372-9088	Project Coordinator KESSNER, JH
Price Code 8C	Data Turnaround 15 Days		
Project Designation Remaining Sites Confirmation Sampling - Soil Full Protocol	Sampling Location 100-N-84:1		SAF No. RC-029
Ice Chest No. AFS-04-052	Field Logbook No. EL-1601-05	COA C10NPLA000	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A100776		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

None BH 7/6/11

Special Handling and/or Storage

Cool 4C BH 7/6/11

Preservation			Cool 4C	Cool 4C	Cool 4C							
Type of Container			G/P	aG	aG							
No. of Container(s)			1	1	1							
Volume			60mL	120mL	120mL							
SAMPLE ANALYSIS			See item (1) in Special Instructions.	PAHs - 8310	PCBs - 8082							
Sample No.	Matrix *	Sample Date	Sample Time									
J1JD94	SOIL	7/6/11	1330	x	x	x						
~~J1JD95~~	SOIL											
~~J1JD96~~	SOIL											
~~J1JD97~~	SOIL											
~~J1JD98~~ BH 7/6/11	SOIL											

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1415 7-6-11	Received By/Stored In	Date/Time 1415 7/6/11
Relinquished By/Removed From	Date/Time 1510 7/6/11	Received By/Stored In 1060, #1	Date/Time 7-6-11 1510
Relinquished By/Removed From WCH	Date/Time 1100 7-7-11	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From	Date/Time 7-8-11 1000	Received By/Stored In	Date/Time 7-8-11 1000
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) 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)

REVIEWED BY DATE 7-7-11

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

000000011

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford
Project/SAF/SOW/Release #: RC-029

Date: 7/8/11

LvL Batch #: 1107039

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7949 4874 1170
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 4.3°	°C	Cooler # AFS-04-052
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 7-8-11
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 _____	

000000012

SR-002-B.doc

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

WC-Hanford, Inc.	Project: RC-029	
2620 Fermi Avenue	Project Number: K3476	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	07/20/2011 11:59

Analytical Report for Metals by SW846 6000/7000 series

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1JD94	1107039-01	Soil	07/06/2011 13:30	07/08/2011 10:00

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-029
LVL#: 1107039
SDG/SAF#: K3476/RC-029

W.O.#: 60049-001-001-0001-00
Date Received: 07-08-11

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 analysis of 1 soil sample.

2. The sample was prepared and analyzed in accordance with methods listed on the data report forms.

   The ending QC sample CRL2 was above the 50-150% control limit for Lead at 154.2%. Samples analyzed prior to the CRL2 had high concentrations of Lead likely causing carry-over contamination of this QC sample.

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) with the exception of CCV4 for Lead. Samples analyzed prior to CCV4 had high concentrations of Lead likely causing carry-over contamination of CCV4. All sample results contained in this report were surrounded by CCVs within control.

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.

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 15 pages.

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 7 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:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J1JD94	Aluminum	22,000	85.9
	Antimony	100	101.9
	Iron	42,000	60.9
	Lead	100	83.4
	Manganese	1,000	79.0
	Silicon	2,100	118.5
	Zinc	1,100	82.1

12. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limit critieria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL. The sample result for Boron was less 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

7/21/11
Date

alm/07-039

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

WC-Hanford, Inc.	Project: RC-029	
2620 Fermi Avenue	Project Number: K3476	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	07/20/2011 11:59

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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Richland WA, 99354	Project Manager: Joan Kessner	07/20/2011 11:59

J1JD94

1107039-01 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**7250**		3.53	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Antimony	0.423	U	0.423	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Arsenic	**3.34**		0.706	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Barium	**64.7**		0.353	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Beryllium	**0.278**		0.141	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Boron	**2.03**		1.41	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Cadmium	**0.204**		0.141	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Calcium	**5290**		70.6	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Chromium	**13.0**		0.141	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Cobalt	**6.04**		1.41	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Copper	**13.8**		0.706	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Iron	**19300**		14.1	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Lead	**23.9**		0.353	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Magnesium	**4160**		52.9	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Manganese	**355**		3.53	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Molybdenum	**0.532**	B	1.41	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Nickel	**10.9**		2.82	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Potassium	**1190**		282	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Selenium	**0.262**		0.212	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Silicon	**353**		1.41	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Silver	0.141	U	0.141	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Sodium	**253**		35.3	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Vanadium	**45.7**		1.76	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Zinc	**274**		7.06	mg/kg dry	1	L107093	07/12/2011	07/14/2011	6010B
Mercury	0.0254	U	0.0254	mg/kg dry	1	L107151	07/15/2011	07/18/2011	7471A

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Richland WA, 99354	Project Manager: Joan Kessner	07/20/2011 11:59

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 L107093 - SW 3050B										
Blank (L107093-BLK1)				Prepared: 07/12/2011 Analyzed: 07/14/2011						
Aluminum	3.62	U	3.62	mg/kg wet						
Antimony	0.435	U	0.435	mg/kg wet						
Arsenic	0.725	U	0.725	mg/kg wet						
Barium	0.362	U	0.362	mg/kg wet						
Beryllium	0.145	U	0.145	mg/kg wet						
Boron	1.45	U	1.45	mg/kg wet						
Cadmium	0.145	U	0.145	mg/kg wet						
Calcium	5.73	B	72.5	mg/kg wet						
Chromium	0.145	U	0.145	mg/kg wet						
Cobalt	1.45	U	1.45	mg/kg wet						
Copper	0.725	U	0.725	mg/kg wet						
Iron	14.5	U	14.5	mg/kg wet						
Lead	0.362	U	0.362	mg/kg wet						
Magnesium	54.3	U	54.3	mg/kg wet						
Manganese	3.62	U	3.62	mg/kg wet						
Molybdenum	1.45	U	1.45	mg/kg wet						
Nickel	2.90	U	2.90	mg/kg wet						
Potassium	290	U	290	mg/kg wet						
Selenium	0.217	U	0.217	mg/kg wet						
Silicon	1.45	U	1.45	mg/kg wet						
Silver	0.145	U	0.145	mg/kg wet						
Sodium	36.2	U	36.2	mg/kg wet						
Vanadium	1.81	U	1.81	mg/kg wet						
Zinc	7.25	U	7.25	mg/kg wet						
Duplicate (L107093-DUP4)			Source: 1107039-01	Prepared: 07/12/2011 Analyzed: 07/14/2011						
Aluminum	6880		3.84	mg/kg dry		7250			5.28	20
Antimony	0.461	U	0.461	mg/kg dry		0.423 U				20
Arsenic	2.80		0.768	mg/kg dry		3.34			17.5	20
Barium	63.5		0.384	mg/kg dry		64.7			1.92	20
Beryllium	0.263		0.154	mg/kg dry		0.278			5.54	20
Boron	1.39	B	1.54	mg/kg dry		2.03			37.6*	20
Cadmium	0.170		0.154	mg/kg dry		0.204			18.1	20
Calcium	5310		76.8	mg/kg dry		5290			0.358	20
Chromium	14.9		0.154	mg/kg dry		13.0			13.9	20
Cobalt	6.42		1.54	mg/kg dry		6.04			6.21	20
Copper	13.3		0.768	mg/kg dry		13.8			4.25	20

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2620 Fermi Avenue	Project Number: K3476	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	07/20/2011 11:59

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 L107093 - SW 3050B										
Duplicate (L107093-DUP4)		**Source: 1107039-01**		Prepared: 07/12/2011 Analyzed: 07/14/2011						
Iron	19500		15.4	mg/kg dry		19300			0.865	20
Lead	16.9		0.384	mg/kg dry		23.9			34.3*	20
Magnesium	4300		57.6	mg/kg dry		4160			3.25	20
Manganese	276		3.84	mg/kg dry		355			25.2*	20
Molybdenum	0.468	B	1.54	mg/kg dry		0.532			12.8	20
Nickel	10.7		3.07	mg/kg dry		10.9			1.30	20
Potassium	1260		307	mg/kg dry		1190			5.56	20
Selenium	0.230	U	0.230	mg/kg dry		0.262				20
Silicon	387		1.54	mg/kg dry		353			9.35	20
Silver	0.154	U	0.154	mg/kg dry		0.141 U				20
Sodium	242		38.4	mg/kg dry		253			4.52	20
Vanadium	44.9		1.92	mg/kg dry		45.7			1.87	20
Zinc	247		7.68	mg/kg dry		274			10.4	20
Matrix Spike (L107093-MS4)		**Source: 1107039-01**		Prepared: 07/12/2011 Analyzed: 07/14/2011						
Aluminum	7960		4.28	mg/kg dry	171.24	7250	418*	75-125		20
Antimony	15.9		0.514	mg/kg dry	42.811	0.423 U	37.0*	75-125		20
Arsenic	150		0.856	mg/kg dry	171.24	3.34	85.7	75-125		20
Barium	218		0.428	mg/kg dry	171.24	64.7	89.6	75-125		20
Beryllium	3.85		0.171	mg/kg dry	4.2811	0.278	83.5	75-125		20
Boron	70.4		1.71	mg/kg dry	85.621	2.03	79.8	75-125		20
Cadmium	3.82		0.171	mg/kg dry	4.2811	0.204	84.4	75-125		20
Calcium	7550		85.6	mg/kg dry	2140.5	5290	106	75-125		20
Chromium	26.5		0.171	mg/kg dry	17.124	13.0	79.0	75-125		20
Cobalt	41.3		1.71	mg/kg dry	42.811	6.04	82.4	75-125		20
Copper	32.0		0.856	mg/kg dry	21.405	13.8	84.7	75-125		20
Iron	19800		17.1	mg/kg dry	85.621	19300	516*	75-125		20
Lead	45.6		0.428	mg/kg dry	42.811	23.9	50.5*	75-125		20
Magnesium	5950		64.2	mg/kg dry	2140.5	4160	83.4	75-125		20
Manganese	345		4.28	mg/kg dry	42.811	355	-24.7*	75-125		20
Molybdenum	73.3		1.71	mg/kg dry	85.621	0.532	85.0	75-125		20
Nickel	45.9		3.42	mg/kg dry	42.811	10.9	81.8	75-125		20
Potassium	3160		342	mg/kg dry	2140.5	1190	92.0	75-125		20
Selenium	138		0.257	mg/kg dry	171.24	0.262	80.5	75-125		20
Silicon	531		1.71	mg/kg dry	85.621	353	208*	75-125		20
Silver	3.43		0.171	mg/kg dry	4.2811	0.141 U	80.2	75-125		20
Sodium	2170		42.8	mg/kg dry	2140.5	253	89.8	75-125		20

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2620 Fermi Avenue	Project Number: K3476	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	07/20/2011 11:59

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 L107093 - SW 3050B									
Matrix Spike (L107093-MS4)		**Source: 1107039-01**	Prepared: 07/12/2011 Analyzed: 07/14/2011						
Vanadium	81.6	2.14	mg/kg dry	42.811	45.7	83.8	75-125		20
Zinc	172	8.56	mg/kg dry	42.811	274	-238*	75-125		20
Reference (L107093-SRM1)			Prepared: 07/12/2011 Analyzed: 07/14/2011						
Aluminum	10300	10.6	mg/kg wet	6670.0		154	0-200.89		
Antimony	51.5	1.27	mg/kg wet	53.000		97.3	0-235.8		
Arsenic	116	2.11	mg/kg wet	114.00		102	82.8-117.54		
Barium	327	1.06	mg/kg wet	307.00		107	79.8-120.2		
Beryllium	107	0.423	mg/kg wet	108.00		98.7	82.8-117.6		
Boron	81.1	4.23	mg/kg wet	85.100		95.3	67.5-132.8		
Cadmium	225	0.423	mg/kg wet	225.00		100	83.6-116.4		
Calcium	3260	211	mg/kg wet	3360.0		97.1	83.3-116.9		
Chromium	82.7	0.423	mg/kg wet	77.200		107	73.3-126.4		
Cobalt	165	4.23	mg/kg wet	166.00		99.5	80.7-118.7		
Copper	261	2.11	mg/kg wet	271.00		96.3	80.8-119.2		
Iron	8410	42.3	mg/kg wet	8420.0		99.9	78.6-121.1		
Lead	191	1.06	mg/kg wet	190.00		100	81.6-118.4		
Magnesium	8720	158	mg/kg wet	8570.0		102	83.2-116.7		
Manganese	969	10.6	mg/kg wet	965.00		100	69.3-130.5		
Molybdenum	242	4.23	mg/kg wet	235.00		103	76.2-123.8		
Nickel	222	8.45	mg/kg wet	221.00		100	79.6-120.8		
Potassium	14700	845	mg/kg wet	14400		102	81.9-118.1		
Selenium	188	0.634	mg/kg wet	187.00		101	75.9-124.6		
Silicon	686	4.23	mg/kg wet	807.00		85.0	0-219.3		
Silver	81.2	0.423	mg/kg wet	83.500		97.3	82.7-117.1		
Sodium	9370	106	mg/kg wet	9730.0		96.3	82.5-117.2		
Vanadium	106	5.28	mg/kg wet	98.700		107	75.9-123.6		
Zinc	198	21.1	mg/kg wet	199.00		99.7	78.4-121.6		

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Richland WA, 99354	Project Manager: Joan Kessner	07/20/2011 11:59

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 L107151 - SW 7471A Prep										
Blank (L107151-BLK1)				Prepared: 07/15/2011 Analyzed: 07/18/2011						
Mercury	0.0290	U	0.0290	mg/kg wet						
Duplicate (L107151-DUP3)		**Source: 1107039-01**		Prepared: 07/15/2011 Analyzed: 07/18/2011						
Mercury	0.0277	U	0.0277	mg/kg dry		0.0254 U				20
Matrix Spike (L107151-MS3)		**Source: 1107039-01**		Prepared: 07/15/2011 Analyzed: 07/18/2011						
Mercury	0.165		0.0254	mg/kg dry	0.14116	0.0254 U	117	75-125		20
Reference (L107151-SRM1)				Prepared: 07/15/2011 Analyzed: 07/18/2011						
Mercury	1.34		0.0281	mg/kg wet	1.2900		104	62.6-138		

* Excessive effervescence. Sample Contamination. JS 7/13/11

Lionville Laboratory

Logbook #: 982

SAMPLE DIGESTION RECORD

Digestion Batch #: L107093
Date/Time Initiated: 7/13/11 1115
Date/Time Completed: 7/13/11 1710
Analyst: JS
Matrix (circle): Soil Water Other
Method (circle one): 3005A 3010A 3050 200.7 (1994)
pH/Turbidity: N/A for Solids.
NOTE: All temperatures are recorded as corrected temperatures

Digested/ Undigested (circle one)
~~Balance~~ #: B14
Balance Cal Verification: ✓ NA
Temp: 93
BLOCK 1 2 (circle one)

Work Order #	Spike Vol (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/Sol/ TC	Texture	Color / Appearance	Artifact	Turb
1106124-01		0.60	50		TO	Coarse	Brown	Rocks	N/A
L107093-Dup1		0.71	50						
-MS1	0.5	0.66	50						
1106124-02		0.50	50			Coarse	Ottawa Sand		
-03		0.78	50			Coarse	Brown	Rocks	
-04		0.60	50			Coarse	Brown	Rocks	
1107002-01		0.62	50			Fine	Brown	Rocks	
L107093-Dup2		0.51	50						
-MS2	0.5	0.61	50						
~~1107003-01~~		~~0.64~~	~~50~~			~~Fine~~	~~Brown~~	~~Rocks~~	
* L107093-Dup3		0.64	50						
-MS3	0.5	0.53	50						
~~1107003-02~~		~~0.71~~	~~50~~			~~Fine~~	~~Brown~~		
1107039-01		0.74	50			Fine	Brown	Rocks	
L107093-Dup4		0.68	50						
-MS4	0.5	0.61	50						
-MB		0.69	50			Coarse	Boiling Chips		
-SA1		0.71	50			Fine	dusty pink sand		

JJS 7/13/11

Spiking IDs / Expiration Date:
MS#: 1101064

LCS#: 1100103

Reagent IDs:
HNO_3 K14036
HCl K14054
H_2O_2 R03A11
1:1 HNO_3 637-091-05
1:1 HCl

File ID#:

Data Review By/Date: 7/15/11

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

Page #:

Lionville Laboratory

MERCURY PREPARATION

Logbook # 968

Analyst: [signature]
Date 7/15/11
Start Time/Temp: 1200/94°
End Time/Temp: 1730/95°

Instrument ID: HG3.1
Balance # B29 /NA
Pipette Calibration (Daily) (Y)

Prep Batch: L107151
Worksheet: HG071801
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				10 ml	50	
0.2 ug/l		0.100		10 ml	50	
1.0 ug/l		0.500		10 ml	50	
2.0 ug/l		1.000		10 ml	50	
5.0 ug/l		2.500		10 ml	50	
10.0 ug/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	
L107151-BLK1				0.31	50	
SRM1		(A)	(A)	0.32	50	
1107015-01				0.33	50	ok [initials] 7/20/11
L107151-DUP1				0.34	50	
MS1		0.500	1.0	0.38	50	
1107015-02				0.32	50	
03				0.37	50	
04				0.38	50	
1107029-01				0.35	50	
L107151-DUP2				0.37	50	ok [initials] 7/20/11
MS2		0.500	1.0	0.35	50	
1107029-02				0.37	50	
03				0.39	50	
04				0.32	50	
05				0.37	50	
06				0.39	50	
07				0.33	50	
1107039-01				0.37	50	

Standard:	ID	Prep Date/Time
ICAL/MS	RI 1001785B	7/15/11 1420
ICV/CCV/LCS	I.V. 1001781A	↓

Reviewed By/Date: Carol Schrenkel 7/20/11

se book # 9386 for std traceability information

Soil LCS True Value = 1.29 mg/Kg
Standard # 1100103 (A)

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

ME-HgCVAA-Prep0910

Page #:

000000011
000000079

Lionville Laboratory

MERCURY PREPARATION

Logbook # 968

Analyst: [illegible]
Date 7/15/11
Start Time/Temp: [illegible] 079
End Time/Temp: [illegible]

Instrument ID: HG3.1
Balance # B29 /NA
Pipette Calibration (Daily) (✓)

Prep Batch: L107151
Worksheet: HG071801
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.
L107151-DUP3				0.34	50	
MS3		0.500	1.0	0.37	50	
1107040-01				0.38	50	
02				0.35	50	
03				0.35	50	
L107151-DUP4				0.38	50	
MS4		0.500	1.0	0.36	50	
1107044-01				0.37	50	
02				0.34	50	
03			V.E. MW 7/15/11	~~0.35~~ 0.37	50	
L107151-DUP5				0.38	50	
MS5		0.500	1.0	0.37	50	

MW 7/15/11

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS		

Reviewed By/Date: Carol Schenkel 7/20/11

se book # 9368 for std traceability information

Soil LCS True Value = [illegible] 079 mg/Kg
Standard # [illegible]

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

ME-HgCVAA-Prep0910

Page #:

000000012

Lionville Laboratory Use Only

1107 039

Custody Transfer Record/Lab Work Request

Page 1 of 1

Lionville Laboratory
A Division of Eberline Analytical Corporation

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC Hanford SAF# RC.029

Est. Final Proj. Sampling Date:

Project#:

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. Johnson

QC: SW Del: STN TAT: 15 days

Date Rec'd: 7-8-11 Date Due: 7-23-11

		A		B		C
Refrigerator #		2		2		2
#/Type Container	Liquid					
	Solid	1AG		1AG		1
Volume	Liquid					
	Solid	120		120		60
Preservatives		—		—		—
ANALYSES REQUESTED		ORGANIC				INORG
		VOA	BNA	Pest/PCB	Herb	PAHs	Metal Hg CN
Lionville Laboratory Use Only				8082		8310 PAH	Met

MATRIX CODES:
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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8082		8310 PAH		Met
01	JIJD94		✓	Soil	7-6-11	1330	X		X		X

Special Instructions:

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

See SRS

Relinquished by	Received by	Date	Time
[signature]	[signature]	7/8/11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

0000001

1 of 1

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-111	Page ~~2~~ of ~~2~~ BH 7/6/11
Collector: RM Berven	Company Contact: Matt Perrott; Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 8C; Data Turnaround: 15 Days
Project Designation: Remaining Sites Confirmation Sampling - Soil Full Protocol	Sampling Location: 100-N-84:1	SAF No.: RC-029	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1601-05; COA: C10NPLA000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A100776	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

None BH 7/6/11

Special Handling and/or Storage

Cool 4C BH 7/6/11

Preservation	Cool 4C	Cool 4C	Cool 4C								
Type of Container	G/P	aG	aG								
No. of Container(s)	1	1	1								
Volume	60mL	120mL	120mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8310	PCBs - 8082								

Sample No.	Matrix *	Sample Date	Sample Time										
J1JD94	SOIL	7/6/11	1330	x	x	x							
~~J1JD95~~	SOIL												
~~J1JD96~~	SOIL												
~~J1JD97~~	SOIL												
J1~~JD98~~ BH 7/6/11	SOIL												

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: RM BERVEN		1415 7-6-11	Received By/Stored In: BHUDSON	1415 7/6/11
Relinquished By/Removed From: BHUDSON		1510 7/6/11	Received By/Stored In: A. Freier 1060, #1	7-6-11 1510
Relinquished By/Removed From: A. Freier 1060, #1	WCH	1100 7-7-11	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex		7-8-11 1000	Received By/Stored In: VICTOR HERNANDEZ	7-8-11 1000
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(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)

REVIEWED BY DATE 7-7-11

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

00000014

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford
Project/SAF/SOW/Release #: RC-029

Date: 7/8/11

LvL Batch #: 1107039

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7949 4874 1170
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 4.3°	°C	Cooler # AFS-04-052
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 _____

000000015

SR-002-B.doc