0096828

SAF-RC-196
Soil/Sediment Sampling – Integrated Remedial Investigation/Feasibility Study, 100-H Area Boreholes
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

No Distribution Required

RECEIVED
MAY 3 1 2011
EDMC

COMMENTS:

SDG K3117 **SAF-RC-196**

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

Sample Location: C7861 (116-H-7); I-001

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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

17 May 2011

RECEIVED
MAY 2011

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	1102062
SDG #	K3117 SPEC EXT
SAF #	RC-196
Date Received	02/04/11
# Samples	1
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
PAHs	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,

Lionville Laboratory
A Division of Eberline Analytical Corporation

Orlette S. Johnson
Project Manager

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

RECEIVED
MAY 2011

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-196 Project Number: K3117 Project Manager: Joan Kessner	**Reported:** 05/17/2011 14:40

Analytical Report for Metals by SW846 6000/7000 series

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B29N90-1	1102062-01	Soil	01/28/2011 14:16	02/04/2011 10:00
B29N90-2	1102062-02	Soil	01/28/2011 14:16	02/04/2011 10:00
B29N90-3	1102062-03	Soil	01/28/2011 14:16	02/04/2011 10:00
B29N90-4	1102062-04	Soil	01/28/2011 14:16	02/04/2011 10:00
B29N90-A1	1102062-05	Leachate	01/28/2011 14:16	02/04/2011 10:00
B29N90-A2	1102062-06	Leachate	01/28/2011 14:16	02/04/2011 10:00
B29N90-B1	1102062-07	Leachate	01/28/2011 14:16	02/04/2011 10:00
B29N90-C1	1102062-08	Leachate	01/28/2011 14:16	02/04/2011 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-196
LVL#: 1102062
SDG/SAF#: K3117/RC-196

W.O.#: 60049-001-001-0001-00
Date Received: 02-04-11

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 analyses of 1 soil sample analyzed in quadruplicate and 4 TCLP leachate samples.

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

   TCLP leachates samples B29N90-A1 and B29N90-A2 were prepared with 5-fold dilutions due to insufficient sample volume.

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.

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 (3-10X the LOD), MB value less than 5% of the RCRA limit, 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 21 pages.

9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer. All laboratory control samples (LCS) were within the 80-120% control limits.

10. All soil matrix spike (MS) recoveries were within the 75-125% control limits.

11. The TCLP leachate matrix spike analyses was performed on sample B2B4F8-B1 within the same digestion batch. Please refer to this package for the associated QC forms.

12. 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.

13. 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.

14. 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

5/17/11
Date

alm/02-062specext

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-196 Project Number: K3117 Project Manager: Joan Kessner	**Reported:** 05/17/2011 14:40

Notes and Definitions

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

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

B29N90-1
1102062-01 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Arsenic	**1.79**	B	2.49	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Barium	**52.5**		0.414	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Cadmium	0.249	U	0.249	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Chromium	**21.4**		0.249	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Lead	**2.89**		2.49	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Selenium	4.14	U	4.14	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Silver	0.414	U	0.414	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

B29N90-2
1102062-02 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Arsenic	**2.32**	B	2.91	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Barium	**52.6**		0.485	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Cadmium	0.291	U	0.291	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Chromium	**20.4**		0.291	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Lead	**3.11**		2.91	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Selenium	4.85	U	4.85	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Silver	0.485	U	0.485	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

B29N90-3

1102062-03 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Arsenic	**1.95**	B	2.80	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Barium	**48.7**		0.467	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Cadmium	0.280	U	0.280	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Chromium	**17.4**		0.280	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Lead	**2.78**	B	2.80	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Selenium	4.67	U	4.67	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Silver	0.467	U	0.467	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

B29N90-4

1102062-04 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Arsenic	**2.46**	B	2.80	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Barium	**53.7**		0.467	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Cadmium	0.280	U	0.280	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Chromium	**21.6**		0.280	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Lead	**2.89**		2.80	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Selenium	4.67	U	4.67	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B
Silver	0.467	U	0.467	mg/kg dry	1	L104326	04/21/2011	05/08/2011	6010B

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

B29N90-A1

1102062-05 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.150	U	0.150	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Barium	0.0250	U	0.0250	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Chromium	0.0150	U	0.0150	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Lead	0.150	U	0.150	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Selenium	0.250	U	0.250	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Silver	0.0250	U	0.0250	mg/L	1	L105076	05/05/2011	05/16/2011	6010

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

B29N90-A2

1102062-06 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.150	U	0.150	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Barium	0.0250	U	0.0250	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Chromium	0.0150	U	0.0150	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Lead	0.150	U	0.150	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Selenium	0.250	U	0.250	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Silver	0.0250	U	0.0250	mg/L	1	L105076	05/05/2011	05/16/2011	6010

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

B29N90-B1

1102062-07 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0300	U	0.0300	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Barium	**0.00517**		0.00500	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Cadmium	0.00300	U	0.00300	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Chromium	0.00300	U	0.00300	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Lead	0.0300	U	0.0300	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Selenium	0.0500	U	0.0500	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Silver	0.00500	U	0.00500	mg/L	1	L105076	05/05/2011	05/16/2011	6010

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

B29N90-C1

1102062-08 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	**0.0102**	B	0.0300	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Barium	**0.00376**	B	0.00500	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Cadmium	0.00300	U	0.00300	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Chromium	0.00300	U	0.00300	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Lead	0.0300	U	0.0300	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Selenium	0.0500	U	0.0500	mg/L	1	L105076	05/05/2011	05/16/2011	6010
Silver	0.00500	U	0.00500	mg/L	1	L105076	05/05/2011	05/16/2011	6010

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

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 L104326 - SW 3050B										
Blank (L104326-BLK1)				Prepared: 04/21/2011 Analyzed: 05/08/2011						
Arsenic	3.00	U	3.00	mg/kg wet						
Barium	0.500	U	0.500	mg/kg wet						
Cadmium	0.300	U	0.300	mg/kg wet						
Chromium	0.300	U	0.300	mg/kg wet						
Lead	3.00	U	3.00	mg/kg wet						
Selenium	5.00	U	5.00	mg/kg wet						
Silver	0.500	U	0.500	mg/kg wet						
Matrix Spike (L104326-MS1)		**Source: 1102062-01**		Prepared: 04/21/2011 Analyzed: 05/08/2011						
Arsenic	170		2.71	mg/kg dry	180.34	1.79	93	75-125		20
Barium	217		0.451	mg/kg dry	180.34	52.5	91	75-125		20
Cadmium	3.81		0.271	mg/kg dry	4.5085	0.249 U	84	75-125		20
Chromium	36.5		0.271	mg/kg dry	18.034	21.4	84	75-125		20
Lead	43.2		2.71	mg/kg dry	45.085	2.89	89	75-125		20
Selenium	159		4.51	mg/kg dry	180.34	4.14 U	88	75-125		20
Silver	3.95		0.451	mg/kg dry	4.5085	0.414 U	88	75-125		20
Reference (L104326-SRM1)				Prepared: 04/21/2011 Analyzed: 05/08/2011						
Arsenic	122		8.49	mg/kg wet	114.00		107	82.8-117.54		
Barium	338		1.42	mg/kg wet	307.00		110	79.8-120.2		
Cadmium	236		0.849	mg/kg wet	225.00		105	83.6-116.4		
Chromium	90.0		0.849	mg/kg wet	77.200		117	73.3-126.4		
Lead	208		8.49	mg/kg wet	190.00		110	81.6-118.4		
Selenium	195		14.2	mg/kg wet	187.00		104	75.9-124.6		
Silver	89.6		1.42	mg/kg wet	83.500		107	82.7-117.1		

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	05/17/2011 14:40

TCLP Metals by SW846 1311 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 L105076 - SW 3005A										
Blank (L105076-BLK1)				Prepared: 05/05/2011 Analyzed: 05/16/2011						
Arsenic	0.0300	U	0.0300	mg/L						
Barium	0.00500	U	0.00500	mg/L						
Cadmium	0.00300	U	0.00300	mg/L						
Chromium	0.00300	U	0.00300	mg/L						
Lead	0.0300	U	0.0300	mg/L						
Selenium	0.0500	U	0.0500	mg/L						
Silver	0.00500	U	0.00500	mg/L						
Blank (L105076-BLK2)				Prepared: 05/05/2011 Analyzed: 05/16/2011						
Arsenic	0.0300	U	0.0300	mg/L						
Barium	0.00500	U	0.00500	mg/L						
Cadmium	0.00300	U	0.00300	mg/L						
Chromium	0.00300	U	0.00300	mg/L						
Lead	0.0300	U	0.0300	mg/L						
Selenium	0.0500	U	0.0500	mg/L						
Silver	0.00500	U	0.00500	mg/L						
LCS (L105076-BS1)				Prepared: 05/05/2011 Analyzed: 05/16/2011						
Arsenic	9.61		0.0300	mg/L	10.000		96.1	80-120		20
Barium	4.93		0.00500	mg/L	5.0000		98.6	80-120		20
Cadmium	0.233		0.00300	mg/L	0.25000		93.2	80-120		20
Chromium	0.472		0.00300	mg/L	0.50000		94.4	80-120		20
Lead	2.39		0.0300	mg/L	2.5000		95.6	80-120		20
Selenium	9.52		0.0500	mg/L	10.000		95.2	80-120		20
Silver	0.486		0.00500	mg/L	0.50000		97.3	80-120		20

Lionville Laboratory **Logbook #:** 957

SAMPLE DIGESTION RECORD

Digestion Batch #: L104326
Date/Time Initiated: 4/21/11 21:30
Date/Time Completed: 4/21/11 23:30
Analyst: BLG
Matrix (circle): Soil Water Other
Method (circle one): 3005A 3010A 3050 200.7 (1994)

Digested / Undigested (circle one)
Balance #: B-14
Balance Cal Verification: ✓ NA
Temp: 95°C
BLOCK 1 2 (circle one)

NOTE: All temperatures are recorded as corrected temperatures

Work Order # IE 4/22/11 BLG	Spike Vol (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/Sol/TC	Texture	Color / Appearance	Artifact	Turb
1102062-1		0.62	50		TO	Fine	gray		
1102062-1-MS1	0.5	0.57	50						
-2		0.53	50						
-3		0.55	50						
-4		0.55	50						
1102099-1		0.58	50			Fine	Brown		
-2		0.53	50						
-3		0.54	50						
-4		0.60	50						
-5		0.56	50			Fine	Brown		
-6		0.55	50						
-7		0.55	50						
-8		0.53	50						
-9		0.65	50			Course	gray	Rocks	
-10		0.67	50						
-11		0.54	50						
-12		0.64	50						
-13		0.55	50			Fine	graywhite		
-14		0.61	50						
-15		0.69	50						
-16		0.58	50						
-BLK1		0.50	50						
-SRM1		0.53	50						

Spiking IDs / Expiration Date:
MS#: 1001843

LCS#: 1100103

Reagent IDs:
HNO_3 K09041
HCl K12 041
H_2O_2 05 2401
1:1 HNO_3 637-042-05
1:1 HCl

File ID#:

Data Review By / Date: Alm 4/22/11

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

Page #:

000000015

Lionville Laboratory **Logbook #:** 963

SAMPLE DIGESTION RECORD

Digestion Batch #: L105076
Date/Time Initiated: 5/6/11 0750
Date/Time Completed: 5/6/11 0850
Analyst: JJS
Matrix (circle): Soil Water Other
Method (circle one): 3005A 3010A 3050 200.7 (1994)

Digested / Undigested (circle one)
Balance #: N/A
Balance Cal Verification: Y NA
Temp: 95
BLOCK 1 2 (circle one)

NOTE: All temperatures are recorded as corrected temperatures

C/C = clear/colorless

Work Order #	Spike Vol (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/Sol/TC	Texture	Color / Appearance	Artifact	Turb
1102062-05		10	50		TC	N/A	C/C	N/A	N/A
· 06		10	50				C/C		
· 07		50	50				C/C		
· 08		50	50				C/C		
1102099-17		10	50				C/C		
· 18		10	50				C/C		
· 19		50	50				C/C		
L105076-MS1	0.5	50	50						
1102099 · 20		50	50				C/C		
· 21		10	50				C/C		
· 22		50	50				C/C		
· 23		50	50				C/C		
· 24		50	50				C/C		
· 25		10	50				C/C		
· 26		50	50				C/C		
· 27		50	50				C/C		
· 28		50	50				C/C		
· 29		10	50				C/C		
· 30		10	50				C/C		
· 31		50	50				C/C		
· 32		50	50				C/C		
L105076-BS1		50	50				C/C		
· MS1	0.5	50	50				C/C		
+ · BS2		50	50				C/C		

JJS 5/6/11

Spiking IDs / Expiration Date:
MS#: 1100338
1100 247
LCS#: 1100 240

Reagent IDs:
HNO_3 H09041
HCl H12096
H_2O_2
1:1 HNO_3
1:1 HCl

File ID#:

Data Review By / Date: Alm 5/9/11

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

+: Associated with L105038

Page #:

00000016

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 966

Start Date: 5-3-11 Start Time: 13:35 Analyst: RH SOP: SPI-1311.1	End Date: 5-4-11 End Time: 7:00 Analyst: RH Method: 1311.1	Tumbler Speed: 31 RPM Leachate Batch #: L105038 Leachate Page: 1 of 6 Room Temp. (°C): Start 21 /Finish 21 Acceptance Criteria: 23°C ± 2°

LvL #: 1102062-05 Client ID#: B29N90-A1 pH After 5 Min: 9.48 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.00 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 100 pH After Extraction: 7.88	Initial Filtration Data and Comments: Solids: ____% / NA RAD I Initial Filtrate Added:
LvL #: 1102062-06 Client ID#: B29N90-A2 pH After 5 Min: 9.48 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.00 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 100 pH After Extraction: 7.90	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL # 1102062-07 Client ID#: B29N90-B1 pH After 5 Min: 9.48 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.00 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 250 pH After Extraction: 8.47	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL #: 1102062-08 Client ID#: B29N90-C1 pH After 5 Min: 9.48 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.00 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 500 pH After Extraction: 8.92	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date 5/6/11

SPI-1311.1-A-0310

Page #

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 9106

Start Date: 5-3-11 Start Time: 13:35 Analyst: RA SOP: SPI-1311.1	End Date: 5-4-11 End Time: 9:00 Analyst: RA Method: 1311.1	Tumbler Speed: 31 RPM Leachate Batch #: L105038 Leachate Page: 6 of 6 Room Temp. (°C): Start 21 /Finish 21 Acceptance Criteria: 23°C ± 2°

LvL #: L105038 Client ID#: pH After 5 Min: pH After Acid/Heat: Extraction Fluid/pH: Sample Wt.(g): Extract Fluid Vol.(mL): 500 pH After Extraction: N/A	Initial Filtration Data and Comments: Solids: ____% / NA BLANK Initial Filtrate Added:
LvL #: Client ID#: pH After 5 Min: pH After Acid/Heat: Extraction Fluid/pH: Sample Wt.(g): Extract Fluid Vol.(mL): pH After Extraction:	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL # Client ID#: pH After 5 Min: pH After Acid/Heat: Extraction Fluid/pH: Sample Wt.(g): Extract Fluid Vol.(mL): pH After Extraction:	Initial Filtration Data and Comments: Solids: ____% / NA 5-4-11 Initial Filtrate Added:
LvL #: Client ID#: pH After 5 Min: pH After Acid/Heat: Extraction Fluid/pH: Sample Wt.(g): Extract Fluid Vol.(mL): pH After Extraction:	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date RBC 5/6/11

SPI-1311.1-A-0310

Page #

Lionville Laboratory Use Only
1102062

Custody Transfer Record/Lab Work Request

Page _____ of _____

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Lionville Laboratory
A Division of Eberline Analytical Corporation

Client: WC Hanford SAF # BC-196
Est. Final Proj. Sampling Date: _____
Project#: _____
Project Contact/Phone#: _____
Lionville Laboratory Project Manager: O. Johnson
QC: SW Del: STD TAT: 30 days

Date Rec'd: 2-4-11 Date Due: 3-6-11

Refrigerator #											A								
#/Type Container	Liquid																		
	Solid										1P								
Volume	Liquid																		
	Solid										500								
Preservatives																			
ANALYSES REQUESTED →		ORGANIC												INORG					
		VOA	BNA	Pest/PCB	Herb	Spec. Extract								Metal	CN				
		Lionville Laboratory Use Only																	
						LOD RCRA	CRG							TCLP LOD RCRA	TCLP CRL				
Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
01	B29N90 -1			Soil	1-28-11	1416					X	X							
02	-2										X	X							
03	-3										X	X							
04	-4										X	X							
05	-A1															X	X		
06	-A2															X	X		
07	-B1															X	X		
08	-C1															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:

See SRC

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

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	2-4-11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-196-349	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Rob Romo, Kaleb Patterson	KESSNER, JH	375-4688	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7861 (116-H-7); I-001	Soil/Sediment Sampling - 100-H Boreholes		RC-196		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
6WS-091	HNF-N-585-2 pg 82	15.4 - 17.9 FT	302509ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	7943890 87687	

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	None
		HOLDING TIME	180 Days
		TYPE OF CONTAINER	P
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
	SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B29N88	SAMPLE ANALYSIS	Special Extraction - D3987 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B29N90	SOIL	1-28-11	1416	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Rob Romo Rob Romo	1-28-1 1605	MO-415 SSU2	1-28-11 1605
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R2	FEB 03 2011 1030	M. A. White M A White	FEB 03 2011 1030
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
M. A. White M A White	FEB 03 2011 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx	2-4-11 1000	VICTOR HERNANDEZ	2-4-11 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
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** The laboratory is to report all TICs for both Method 8260 and 8270.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford
Project/SAF/SOW/Release #: RC-196

Date: 2-4-11

LvL Batch #: 1102062

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7943 8908 7681
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 2°	°C	Cooler # GWS-091
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 2-4-11
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 _____

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

RECEIVED
MAY 2011

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-196 Project Number: K3117 Project Manager: Joan Kessner	**Reported:** 05/10/2011 15:36

Analytical Report for Wet Chemistry

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B29N90-1	1102062-01	Soil	01/28/2011 14:16	02/04/2011 10:00
B29N90-2	1102062-02	Soil	01/28/2011 14:16	02/04/2011 10:00
B29N90-3	1102062-03	Soil	01/28/2011 14:16	02/04/2011 10:00
B29N90-4	1102062-04	Soil	01/28/2011 14:16	02/04/2011 10:00
B29N90-A1	1102062-05	Leachate	01/28/2011 14:16	02/04/2011 10:00
B29N90-A2	1102062-06	Leachate	01/28/2011 14:16	02/04/2011 10:00
B29N90-B1	1102062-07	Leachate	01/28/2011 14:16	02/04/2011 10:00
B29N90-C1	1102062-08	Leachate	01/28/2011 14:16	02/04/2011 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-196 K3117
LVL#: 1102062 **Date Received:** 02-04-11

INORGANIC NARRATIVE

1. This narrative covers the analyses of 4 soil and 4 leachate samples.

2. The samples were prepared using the client prescribed leaching procedure and analyzed in accordance with the methods indicated on the data summary report.

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

3. Sample holding times as required by the method and/or contract were met for the leachate samples as analyses were performed within 24 hours of the completion of the filtering step of the preparation procedure; sample holding time for total Hexavalent Chromium (Cr^{6+}) were not met (within 2X holding time).

4. The method blanks were within the method criteria.

5. The Laboratory Control Samples (LCS) were within the 90-110% and 80-120% control limits.

6. The replicate analysis for Percent Solids was within the 20% Relative Percent Difference (RPD) control limit.

7. Results for soil samples are reported on a dry weight basis.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory

5/12/11
Date

njp\i02-062

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 8 pages.

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-196	
2620 Fermi Avenue	Project Number: K3117	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/10/2011 15:36

Notes and Definitions

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

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/10/2011 15:36

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
B29N90-1 (1102062-01) Soil									
%Solids	**97.3**	0.1	0.1	% by Weight	1	L102234	02/16/2011	02/16/2011	SM2540G
Hexavalent Chromium	0.21 U	0.21	0.51	mg/kg dry	1	L103262	03/18/2011	03/18/201	SW846 7196A
B29N90-2 (1102062-02) Soil									
%Solids	**97.3**	0.1	0.1	% by Weight	1	L102234	02/16/2011	02/16/2011	SM2540G
Hexavalent Chromium	0.21 U	0.21	0.51	mg/kg dry	1	L103262	03/18/2011	03/18/201	SW846 7196A
B29N90-3 (1102062-03) Soil									
%Solids	**97.3**	0.1	0.1	% by Weight	1	L102234	02/16/2011	02/16/2011	SM2540G
Hexavalent Chromium	0.21 U	0.21	0.51	mg/kg dry	1	L103262	03/18/2011	03/18/201	SW846 7196A
B29N90-4 (1102062-04) Soil									
%Solids	**97.3**	0.1	0.1	% by Weight	1	L102234	02/16/2011	02/16/2011	SM2540G
Hexavalent Chromium	0.21 U	0.21	0.51	mg/kg dry	1	L103262	03/18/2011	03/18/201	SW846 7196A
B29N90-A1 (1102062-05) Leachate									
Hexavalent Chromium	0.01 U	0.01	0.02	mg/L	1	L105070	05/04/2011	05/04/201	SW846 7196A
B29N90-A2 (1102062-06) Leachate									
Hexavalent Chromium	0.01 U	0.01	0.02	mg/L	1	L105070	05/04/2011	05/04/201	SW846 7196A
B29N90-B1 (1102062-07) Leachate									
Hexavalent Chromium	0.01 U	0.01	0.02	mg/L	1	L105070	05/04/2011	05/04/201	SW846 7196A
B29N90-C1 (1102062-08) Leachate									
Hexavalent Chromium	0.01 U	0.01	0.02	mg/L	1	L105070	05/04/2011	05/04/201	SW846 7196A

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

WC-Hanford, Inc.	Project: RC-196	
2620 Fermi Avenue	Project Number: K3117	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	05/10/2011 15:36

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L102234 - % Solids										
Duplicate (L102234-DUP3)	**Source: 1102062-01**			Prepared & Analyzed: 02/16/2011						
%Solids	95.7	0.1	0.1	% by Weight		97.3			2	20
Batch L103262 - SW 3060A										
Blank (L103262-BLK1)				Prepared & Analyzed: 03/18/2011						
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg wet						
LCS (L103262-BS1)				Prepared & Analyzed: 03/18/2011						
Hexavalent Chromium	3.97	0.20	0.50	mg/kg wet	4.0000		99	80-120		
LCS (L103262-BS2)				Prepared & Analyzed: 03/18/2011						
Hexavalent Chromium	1030 D	20.0	50.0	mg/kg wet	1036.8		99	80-120		
Batch L105070 - Default Prep GenChem										
Blank (L105070-BLK1)				Prepared & Analyzed: 05/04/2011						
Hexavalent Chromium	0.01 U	0.01	0.02	mg/L						
Blank (L105070-BLK2)				Prepared & Analyzed: 05/04/2011						
Hexavalent Chromium	0.01 U	0.01	0.02	mg/L						
LCS (L105070-BS1)				Prepared & Analyzed: 05/04/2011						
Hexavalent Chromium	0.97	0.01	0.02	mg/L	1.0000		97	90-110		20

Lionville Laboratory Use Only

1102062

Custody Transfer Record/Lab Work Request

Page _____ of _____

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Lionville Laboratory
A Division of Eberline Analytical Corporation

Client: WC Hanford SAF # RC-196

Est. Final Proj. Sampling Date: _____

Project#: _____

Project Contact/Phone#: _____

Lionville Laboratory Project Manager: O. Johnson

QC: SW Del: STD TAT: 30 days

Date Rec'd: 2-4-11 Date Due: 3-6-11

Refrigerator #							A											
#/Type Container	Liquid																	
	Solid						1P											
Volume	Liquid																	
	Solid						500											
Preservatives																		
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	Spec. Extract				Metal	CN							
		Lionville Laboratory Use Only																
						LOD RCRA	CRG					TCLP GOD RCRA	TCLP CRL					
01	B29N90 -1					X	X											
02	-2					X	X											
03	-3					X	X											
04	-4					X	X											
05	-A1											X	X					
06	-A2											X	X					
07	-B1											X	X					
08	-C1											X	X					

Lenchite

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:

See SRC

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

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	2-4-11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

Grizzlinn Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-196-349	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Rob Romo, Kruck, Patterson	KESSNER, JH	375-4688	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7861 (116-H-7); I-001	Soil/Sediment Sampling - 100-H Boreholes		RC-196		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-091	HNF-N-585-2 pg 82	15.4 - 17.9 FT	302509ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	7943890 87687	

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	None
		HOLDING TIME	180 Days
		TYPE OF CONTAINER	P
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
	SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B29N88	SAMPLE ANALYSIS	Special Extraction - D3987 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B29N90	SOIL	1-28-11	1416	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Rob Romo, Robert Romo	1-28-1 1605	MO-415 SSU2	1-28-11 1605
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R2	FEB 03 2011 1030	M. A. White	FEB 03 2011 1030
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
M. A. White	FEB 03 2011 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx	2-4-11 1000	VICTOR HERNANDEZ	2-4-11 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
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** The laboratory is to report all TICs for both Method 8260 and 8270.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford
Project/SAF/SOW/Release #: RC-196

Date: 2-4-11

LvL Batch #: 1102062

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7943 8908 7681
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 2°	°C	Cooler # GWS-091
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 2-4-11
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 _____	