0099922

SAF-RC-214
Characterization of Hanford Site Coal Ash Components - Other
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 10/13/11
INITIAL/DATE

COMMENTS:

SDG K3632 SAF-RC-214

Rad only Chem only ☑ Rad & Chem

☑ Complete Partial

Sample Location: 126-H-1 Depth

RECEIVED
OCT 21 2011
EDMC

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

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SEP 2011

September 16, 2011

Ms. Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
MSIN H4-21
Richland, WA 99352

Reference: **P.O. #S00W235A01**
Eberline Analytical S1-09-013-7784 SDG K3632

Dear Ms. Kessner:

Enclosed is the data report for seven solid (other solid) samples designated under SAF No. RC-214. The samples were received at Eberline Analytical on September 1, 2011. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Joseph Verville
Client Services Manager

NJV/kwp

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K3632 was composed of seven solid (other solid) samples designated under SAF No. RC-214 with a Project Designation of: Characterization of Hanford Site Coal Ash Components – Other.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. The results were transmitted to WCH via e-mail on September 16, 2011.

2.0 ANALYSIS NOTES

2.1 Total Uranium Analysis

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

9/16/11

Joseph Verville
Client Services Manager

Date

E B E R L I N E A N A L Y T I C A L - R I C H M O N D
SAMPLE DELIVERY GROUP K3632

SDG	7784
Contact	Joseph Verville

Client	Hanford
Contract	No. S00W235A01
Case no	SDG K3632

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	09/16/11

SDG 7784
Contact Joseph Verville

REPORT GUIDE

Client Hanford
Contract No. S00W235A01
Case no SDG_K3632

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/16/11

SDG 7784
Contact Joseph Verville

GUIDE, cont.

Client Hanford
Contract No. S00W235A01
Case no SDG_K3632

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

SDG 7784
Contact Joseph Verville

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A01
Case no SDG K3632

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
S109013-01	J1HJ64	126-H-1 SURFACE	SOLID		RC-214	RC-214-40	08/27/11 09:15
S109013-02	J1HJ67	126-H-1 SURFACE	SOLID		RC-214	RC-214-40	08/24/11 11:10
S109013-03	J1HJ72	126-H-1 SURFACE	SOLID		RC-214	RC-214-41	08/24/11 09:50
S109013-04	J1HJ77	126-H-1 DUPLICATE	SOLID		RC-214	RC-214-43	08/24/11 09:50
S109013-05	J1HJ80	126-H-1 DEPTH	SOLID		RC-214	RC-214-46	08/24/11 09:55
S109013-06	J1HJ81	126-H-1 DEPTH	SOLID		RC-214	RC-214-47	08/24/11 11:15
S109013-07	J1HJ82	126-H-1 DEPTH	SOLID		RC-214	RC-214-48	08/27/11 09:20
S109013-15	Lab Control Sample		SOLID		RC-214		
S109013-16	Method Blank		SOLID		RC-214		
S109013-17	Duplicate (S109013-01)	126-H-1 SURFACE	SOLID		RC-214		08/27/11 09:15

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

SDG 7784
Contact Joseph Verville

QC SUMMARY

Client Hanford
Contract No. S00W235A01
Case no SDG K3632

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7784	RC-214-40	J1HJ64	SOLID	100.0	25.52 g		09/01/11	5	S109013-01	7784-001
		J1HJ67	SOLID	100.0	50.68 g		09/01/11	8	S109013-02	7784-002
	RC-214-41	J1HJ72	SOLID	100.0	53.41 g		09/01/11	8	S109013-03	7784-003
	RC-214-43	J1HJ77	SOLID	100.0	50.70 g		09/01/11	8	S109013-04	7784-004
	RC-214-46	J1HJ80	SOLID	100.0	55.16 g		09/01/11	8	S109013-05	7784-005
	RC-214-47	J1HJ81	SOLID	100.0	61.13 g		09/01/11	8	S109013-06	7784-006
	RC-214-48	J1HJ82	SOLID	100.0	27.41 g		09/01/11	5	S109013-07	7784-007
		Method Blank	SOLID						S109013-16	7784-016
		Lab Control Sample	SOLID						S109013-15	7784-015
		Duplicate (S109013-01)	SOLID	100.0	25.52 g		09/01/11	5	S109013-17	7784-017

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

SDG 7784
Contact Joseph Verville

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A01
Case no SDG K3632

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Kinetic Phosphorimetry, ug												
U_T	SOLID	Uranium, Total in Solids	7311-129		7			1	1	1/1		

Duplicates and Spikes are those with original sample in the QC Batch of some Client sample in this SDG.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

SDG 7784
Contact Joseph Verville

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A01
Case no SDG K3632

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S109013-01	J1HJ64			7784-001	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
08/27/11	126-H-1 SURFACE		SOLID							
09/01/11	RC-214-40	RC-214								
S109013-02	J1HJ67			7784-002	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
08/24/11	126-H-1 SURFACE		SOLID							
09/01/11	RC-214-40	RC-214								
S109013-03	J1HJ72			7784-003	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
08/24/11	126-H-1 SURFACE		SOLID							
09/01/11	RC-214-41	RC-214								
S109013-04	J1HJ77			7784-004	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
08/24/11	126-H-1 DUPLICATE		SOLID							
09/01/11	RC-214-43	RC-214								
S109013-05	J1HJ80			7784-005	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
08/24/11	126-H-1 DEPTH		SOLID							
09/01/11	RC-214-46	RC-214								
S109013-06	J1HJ81			7784-006	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
08/24/11	126-H-1 DEPTH		SOLID							
09/01/11	RC-214-47	RC-214								
S109013-07	J1HJ82			7784-007	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
08/27/11	126-H-1 DEPTH		SOLID							
09/01/11	RC-214-48	RC-214								
S109013-15	Lab Control Sample			7784-015	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
			SOLID							
		RC-214								
S109013-16	Method Blank			7784-016	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
			SOLID							
		RC-214								
S109013-17	Duplicate (S109013-01)			7784-017	U_T		09/14/11	09/14/11	BW	Uranium, Total in Solids
08/27/11	126-H-1 SURFACE		SOLID							
09/01/11		RC-214								

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

SDG 7784
Contact Joseph Verville

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A01
Case no SDG K3632

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
U_T	RC-214	Uranium, Total in Solids	UTOT_KPA	7			1	1	1	10
TOTALS				7			1	1	1	10

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-016 Method Blank

METHOD BLANK

SDG	7784	Client/Case no	Hanford	SDG_K3632	
Contact	Joseph Verville	Contract	No. S00W235A01		
Lab sample id	S109013-16	Client sample id	Method Blank		
Dept sample id	7784-016	Material/Matrix		SOLID	
		SAF No	RC-214		

ANALYTE	CAS NO	RESULT ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST
Total Uranium	7440-61-1	0	0.006	0.013	1.00	U	U_T

QC-BLANK #79767

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-015

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7784
Contact Joseph Verville

Client/Case no Hanford SDG K3632
Contract No. S00W235A01

Lab sample id S109013-15
Dept sample id 7784-015

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No RC-214

ANALYTE	RESULT ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST	ADDED ug/g	2σ ERR ug/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Total Uranium	31.8	3.8	0.132	1.00		U_T	33.0	1.3	96	82-118	80-120

QC-LCS #79766

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-017 J1HJ64

DUPLICATE

SDG	7784			Client/Case no	Hanford SDG K3632
Contact	Joseph Verville			Contract	No. S00W235A01
	DUPLICATE		ORIGINAL		
Lab sample id	S109013-17	Lab sample id	S109013-01	Client sample id	J1HJ64
Dept sample id	7784-017	Dept sample id	7784-001	Location/Matrix	126-H-1 SURFACE SOLID
		Received	09/01/11	Collected/Weight	08/27/11 09:15 25.52 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-214-40 RC-214

ANALYTE	DUPLICATE ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST	ORIGINAL ug/g	2σ ERR (COUNT)	MDA ug/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Total Uranium	2.43	0.30	0.132	1.00		U_T	2.24	0.25	0.132		8	25	1.0

QC-DUP#1 79768

Char. of Hanford Site Coal Ash Components - Other

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-001 J1HJ64

DATA SHEET

SDG	7784	Client/Case no	Hanford	SDG_K3632	
Contact	Joseph Verville	Contract	No. S00W235A01		
Lab sample id	S109013-01	Client sample id	J1HJ64		
Dept sample id	7784-001	Location/Matrix	126-H-1 SURFACE	SOLID	
Received	09/01/11	Collected/Weight	08/27/11 09:15	25.52 g	
% solids	100.0	Custody/SAF No	RC-214-40	RC-214	

ANALYTE	CAS NO	RESULT ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST
Total Uranium	7440-61-1	2.24	0.25	0.132	1.00		U_T

Char. of Hanford Site Coal Ash Components - Other

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-002 J1HJ67

DATA SHEET

SDG	7784	Client/Case no	Hanford	SDG_K3632	
Contact	Joseph Verville	Contract	No. S00W235A01		
Lab sample id	S109013-02	Client sample id	J1HJ67		
Dept sample id	7784-002	Location/Matrix	126-H-1 SURFACE	SOLID	
Received	09/01/11	Collected/Weight	08/24/11 11:10	50.68 g	
% solids	100.0	Custody/SAF No	RC-214-40	RC-214	

ANALYTE	CAS NO	RESULT ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST
Total Uranium	7440-61-1	4.01	0.49	0.132	1.00		U_T

Char. of Hanford Site Coal Ash Components - Other

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-003 J1HJ72

DATA SHEET

SDG	7784	Client/Case no	Hanford	SDG_K3632
Contact	Joseph Verville	Contract	No. S00W235A01	
Lab sample id	S109013-03	Client sample id	J1HJ72	
Dept sample id	7784-003	Location/Matrix	126-H-1 SURFACE	SOLID
Received	09/01/11	Collected/Weight	08/24/11 09:50	53.41 g
% solids	100.0	Custody/SAF No	RC-214-41	RC-214

ANALYTE	CAS NO	RESULT ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST
Total Uranium	7440-61-1	3.06	0.37	0.132	1.00		U_T

Char. of Hanford Site Coal Ash Components - Other

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-004 J1HJ77

DATA SHEET

SDG	7784	Client/Case no	Hanford	SDG_K3632
Contact	Joseph Verville	Contract	No. S00W235A01	
Lab sample id	S109013-04	Client sample id	J1HJ77	
Dept sample id	7784-004	Location/Matrix	126-H-1 DUPLICATE	SOLID
Received	09/01/11	Collected/Weight	08/24/11 09:50	50.70 g
% solids	100.0	Custody/SAF No	RC-214-43	RC-214

ANALYTE	CAS NO	RESULT ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST
Total Uranium	7440-61-1	2.91	0.36	0.132	1.00		U_T

Char. of Hanford Site Coal Ash Components - Other

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-005 J1HJ80

DATA SHEET

SDG	7784	Client/Case no	Hanford	SDG_K3632	
Contact	Joseph Verville	Contract	No. S00W235A01		
Lab sample id	S109013-05	Client sample id	J1HJ80		
Dept sample id	7784-005	Location/Matrix	126-H-1 DEPTH	SOLID	
Received	09/01/11	Collected/Weight	08/24/11 09:55	55.16 g	
% solids	100.0	Custody/SAF No	RC-214-46	RC-214	

ANALYTE	CAS NO	RESULT ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST
Total Uranium	7440-61-1	4.25	0.51	0.132	1.00		U_T

Char. of Hanford Site Coal Ash Components - Other

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-006 J1HJ81

DATA SHEET

SDG	7784	Client/Case no	Hanford	SDG_K3632	
Contact	Joseph Verville	Contract	No. S00W235A01		
Lab sample id	S109013-06	Client sample id	J1HJ81		
Dept sample id	7784-006	Location/Matrix	126-H-1 DEPTH	SOLID	
Received	09/01/11	Collected/Weight	08/24/11 11:15	61.13 g	
% solids	100.0	Custody/SAF No	RC-214-47	RC-214	

ANALYTE	CAS NO	RESULT ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST
Total Uranium	7440-61-1	2.78	0.34	0.132	1.00		U_T

Char. of Hanford Site Coal Ash Components - Other

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

7784-007 J1HJ82

DATA SHEET

SDG	7784	Client/Case no	Hanford	SDG_K3632	
Contact	Joseph Verville	Contract	No. S00W235A01		
Lab sample id	S109013-07	Client sample id	J1HJ82		
Dept sample id	7784-007	Location/Matrix	126-H-1 DEPTH	SOLID	
Received	09/01/11	Collected/Weight	08/27/11 09:20	27.41 g	
% solids	100.0	Custody/SAF No	RC-214-48	RC-214	

ANALYTE	CAS NO	RESULT ug/g	2σ ERR (COUNT)	MDA ug/g	RDL ug/g	QUALI-FIERS	TEST
Total Uranium	7440-61-1	4.18	0.51	0.132	1.00		U_T

Char. of Hanford Site Coal Ash Components - Other

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

Test	U T
Matrix	SOLID
SDG	7784
Contact	Joseph Verville

LAB METHOD SUMMARY

URANIUM, TOTAL IN SOLIDS

KINETIC PHOSPHORIMETRY, UG

Client	Hanford
Contract	No. S00W235A01
Contract	SDG K3632

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Uranium
Preparation batch 7311-129					
S109013-01			7784-001	J1HJ64	2.24
S109013-02			7784-002	J1HJ67	4.01
S109013-03			7784-003	J1HJ72	3.06
S109013-04			7784-004	J1HJ77	2.91
S109013-05			7784-005	J1HJ80	4.25
S109013-06			7784-006	J1HJ81	2.78
S109013-07			7784-007	J1HJ82	4.18
S109013-15			7784-015	Lab Control Sample	ok
S109013-16			7784-016	Method Blank	U
S109013-17			7784-017	Duplicate (S109013-01)	ok
Nominal values and limits from method				RDLs (ug/g)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA ug/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7311-129			2σ prep error		Reference Lab Notebook 7311 pg. 129											
S109013-01			J1HJ64	0.132	0.0500								18	09/14/11	09/14	KPA-001
S109013-02			J1HJ67	0.132	0.0500								21	09/14/11	09/14	KPA-001
S109013-03			J1HJ72	0.132	0.0500								21	09/14/11	09/14	KPA-001
S109013-04			J1HJ77	0.132	0.0500								21	09/14/11	09/14	KPA-001
S109013-05			J1HJ80	0.132	0.0500								21	09/14/11	09/14	KPA-001
S109013-06			J1HJ81	0.132	0.0500								21	09/14/11	09/14	KPA-001
S109013-07			J1HJ82	0.132	0.0500								18	09/14/11	09/14	KPA-001
S109013-15			Lab Control Sample	0.132	0.0500									09/14/11	09/14	KPA-001
S109013-16			Method Blank	0.013	0.0500									09/14/11	09/14	KPA-001
S109013-17			Duplicate (S109013-01)	0.132	0.0500								18	09/14/11	09/14	KPA-001
Nominal values and limits from method				1.00	0.0500								180			

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/16/11

EBERLINE ANALYTICAL-RICHMOND

SAMPLE DELIVERY GROUP K3632

Test U T Matrix SOLID	Client Hanford
SDG 7784	Contract No. S00W235A01
Contact Joseph Verville	Contract SDG K3632

LAB METHOD SUMMARY, cont.

URANIUM, TOTAL IN SOLIDS

KINETIC PHOSPHORIMETRY, UG

PROCEDURES	REFERENCE	UTOT_KPA
	SPP-044	Sample Preparation for Total Uranium by Kinetic Phosphorimetry, rev 0
	CP-928	Total Uranium by Kinetic Phosphorimetry, rev 11
	CP-929	Calibration of the Kinetic Phosphorimeter, rev 13

AVERAGES ± 2 SD	MDA	0.120 ± 0.075
FOR 10 SAMPLES	YIELD	±

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/16/11

SDG 7784
Contact Joseph Verville

REPORT GUIDE

Client Hanford
Contract No. S00W235A01
Case no SDG_K3632

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/16/11

SDG 7784
Contact Joseph Verville

REPORT GUIDE

Client Hanford
Contract No. S00W235A01
Case no SDG K3632

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/16/11

SDG 7784
Contact Joseph Verville

REPORT GUIDE

Client Hanford
Contract No. S00W235A01
Case no SDG_K3632

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/16/11

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

SDG 7784
Contact Joseph Verville

GUIDE, cont.

Client Hanford
Contract No. S00W235A01
Case no SDG K3632

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

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Protocol RC-214
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/16/11

SDG 7784	Client Hanford
Contact Joseph Verville	Contract No. S00W235A01
	Case no SDG_K3632

GUIDE, cont.

DATA SHEET

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

SDG	7784
Contact	Joseph Verville

REPORT GUIDE

Client	Hanford
Contract	No. S00W235A01
Case no	SDG_K3632

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	09/16/11

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REPORT GUIDE

Client Hanford
Contract No. S00W235A01
Case no SDG_K3632

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-RG
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Report date 09/16/11

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

SDG	7784
Contact	Joseph Verville

REPORT GUIDE

Client	Hanford
Contract	No. S00W235A01
Case no	SDG K3632

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits

Lab id	EBRLNE
Protocol	RC-214
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	09/16/11

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GUIDE, cont.

Client Hanford
Contract No. S00W235A01
Case no SDG_K3632

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/16/11

SDG 7784
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REPORT GUIDE

Client Hanford
Contract No. S00W235A01
Case no SDG_K3632

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

Lab id EBRLNE
Protocol RC-214
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/16/11

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

METHOD SUMMARY

* Count times are underlined if less than the nominal value specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-40	Page 1 of 1

Collector: Sparks	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C	Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE K3632 (7784)		SAF No.: RC-214		
Ice Chest No.: GWS-184	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx		
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3053		Bill of Lading/Air Bill No.: 7951 3916 6465 ~~See OSPC~~		

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	~~10mL~~ 60							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

	Sample No.	Matrix *	Sample Date	Sample Time										
6	J1HJ63	OTHER												
7	J1HJ64	OTHER	8-22-11	0915				X						
8	J1HJ65	OTHER												
9	J1HJ66	OTHER												
0	J1HJ67	OTHER												

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Sparks	8-22-11 1500	SSU #1	8-22-11 1500
Relinquished By/Removed From: SSU-1	AUG 31 2011 0900	L.D. Wall CHPRC K.D. Wall	AUG 31 2011 0900
Relinquished By/Removed From: L.D. Wall CHPRC K.D. Wall	AUG 31 2011 1400	FEDEX	
Relinquished By/Removed From: FED EX		M. MATSUMAN	09/01/11 0930
Relinquished By/Removed From			
Relinquished By/Removed From			

SPECIAL INSTRUCTIONS

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY SJD DATE 8-27-11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-40	Page 1 of 1

Collector C. Fulton	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9C	Data Turnaround 15 Days		
Project Designation Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location 126-H-1 SURFACE K3632 (7784)		SAF No. RC-214
Ice Chest No. GWS-184	Field Logbook No. EL-1658	COA BESCAS6000	Method of Shipment FedEx
Shipped To SBERLINE SERVICES / LIONVILLE	Offsite Property No. 3053		Bill of Lading/Air Bill No. ~~See OSPC~~ 7951 3916 6465

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None		
Type of Container	G/P	aG	P	G/P		
No. of Container(s)	1	1	2	1		
Volume	250mL	250mL	1000mL	~~10mL~~ 100mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium		

Sample No.	Matrix *	Sample Date	Sample Time									
J1HJ63	OTHER	~~8/24/11~~ 8/24/11										
J1HJ64	OTHER											
J1HJ65	OTHER											
J1HJ66	OTHER											
J1HJ67	OTHER	8/24/11	1110				✓					

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
C. Fulton	8/24/11 1200	SSUH1	8/24/11 1200
SSU-1	AUG 3 1 2011 0900	L.D. Well GUPRC	AUG 3 1 2011 0900
L.D. Well GUPRC	AUG 3 1 2011 1400	FEDEX	
FED EX		TF LEATHERMAN	09/01/11 0930

SPECIAL INSTRUCTIONS

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY DATE 8/24/11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-41	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE K3632 (7784)		SAF No.: RC-214
Ice Chest No.: BWS-184	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3053		Bill of Lading/Air Bill No.: 7951 3916 6465 ~~See OSPC~~ LW. 8/31/11

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	~~10mL~~ 60 LW. 8/30/11							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

	Sample No.	Matrix *	Sample Date	Sample Time										
21	J1HJ68	OTHER	~~8/24/11~~ 8/24/11											
22	J1HJ69	OTHER												
23	J1HJ70	OTHER												
24	J1HJ71	OTHER												
25	J1HJ72	OTHER	8/24/11	0950					✓					

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: C. Fulton	Date/Time: 8/24/11 1200	Received By/Stored In: SSU#1	Date/Time: 8/24/11 1200
Relinquished By/Removed From: SSU-1	Date/Time: AUG 3 1 2011 0900	Received By/Stored In: L.D. Wall	Date/Time: AUG 3 1 2011 0900
Relinquished By/Removed From: L.D. Wall	Date/Time: AUG 3 1 2011 1400	Received By/Stored In: FEDEX LW. 8/31/11	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In: M. MATHUMAN	Date/Time: 09/01/11 0930
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

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY [illegible] DATE 8/24/11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-43	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DUPLICATE K3632 (7784)		SAF No.: RC-214
Ice Chest No.: GWS-184	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: 3053		Bill of Lading/Air Bill No.: See USPC 7951 3916 6465

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None	20.8/31/11						
Type of Container	G/P	aG	P	G/P							
No. of Container(s)		1	2	1							
Volume	250mL	250mL	1000mL	~~10ml~~ 60 ML	8/30/11						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION -ASTM D3987	Total Uranium							

Sample No.	Matrix *	Sample Date	Sample Time										
J1HJ77	OTHER	8/24/11	0950				✓						

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: C. Fulton	Date/Time: 8/24/11 1200	Received By/Stored In: SSU-1
Relinquished By/Removed From: SSU-1	Date/Time: AUG 31 2011 0900	Received By/Stored In: L.D. Wall
Relinquished By/Removed From: L.D. Wall	Date/Time: AUG 31 2011 1400	Received By/Stored In: FEDEX
Relinquished By/Removed From: FEDEX	Date/Time:	Received By/Stored In: TRANSPORTATION 09/01/11 0930
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:

SPECIAL INSTRUCTIONS

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY

DATE 8/24/11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-46	Page 1 of 1

Collector C. FULTON	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9C	Data Turnaround 15 Days
Project Designation Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location 126-H-1 DEPTH K3632 (7784)		SAF No. RC-214		
Ice Chest No. GWS-184	Field Logbook No. EL-1658	COA BESCAS6000	Method of Shipment FedEx		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. 3053		Bill of Lading/Air Bill No. 7951 3916 6465 See OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

SAMPLE ANALYSIS												
Preservation				None	Cool 4C	None	None	LW. 8/31/11				
Type of Container				G/P	aG	P	G/P					
No. of Container(s)				1	1	4	1					
Volume				250mL	250mL	1000mL	~~10mL~~ 60mL	LW 8/30/11				
				See item (1) in Special Instructions.	PAHs - 8270 LW 8/30/11	SPECIAL EXTRACTION - ASTM D3987	Total Uranium					
Sample No.	Matrix *	Sample Date	Sample Time									
J1HJ80	OTHER	8/24/11	0955				✓					

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From C. Fulton	8/24/11 1100	SSU #1	8/24/11 1300
Relinquished By/Removed From SSU-1	AUG 31 2011 0900	Received By/Stored In L.D. Wall	AUG 31 2011 0900
Relinquished By/Removed From L.D. Wall	AUG 31 2011 1400	Received By/Stored In FEDEX	
Relinquished By/Removed From FEDEX		Received By/Stored In M. LEATHERMAN	09/01/11 0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY SJD DATE 8 24 11

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-47	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH K3632 (17784)		SAF No.: RC-214
Ice Chest No.: GWS-184	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3053		Bill of Lading/Air Bill No.: See OSPC 7951 3916 6465

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	4	1							
Volume	250mL	250mL	1000mL	~~10mL~~ 250mL 100mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

Sample No.	Matrix *	Sample Date	Sample Time				✓						
J1HJ81	OTHER	8/24/11	~~1400~~ 1115										

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
C. Fulton	8/24/11 1200	SSU #4	8/24/11 1200
SSU-1	AUG 3 1 2011 0900	L.D. Wall	AUG 3 1 2011 0900
L.D. Wall	AUG 3 1 2011 1400	FEDEX	
FED EX			09/01/11 0920

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY

DATE 8/24/11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-48	Page 1 of 1

Collector: Sparks	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH K3632 (7784)		SAF No.: RC-214
Ice Chest No.: GWS-184	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3053		Bill of Lading/Air Bill No.: 795139166465

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	4	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							
Sample No. / Matrix * / Sample Date / Sample Time											
J1HJ82 / OTHER / 8-27-11 / 0920				X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Sparks	8-27-11 1300	Received By/Stored In: SSU-1	8-27-11 1500
Relinquished By/Removed From: SSU-1	AUG 31 2011 0900	Received By/Stored In: L.D. Wall	AUG 31 2011 0900
Relinquished By/Removed From: L.D. Wall	AUG 31 2011 1400	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FED EX		Received By/Stored In:	09/01/11 0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 (Total Mercury)

REVIEWED BY

DATE 8-27-11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

DO GLK S/C 9-1-11

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

SMEARS

Client: W.C-HANFORD City RICHLAND State WA

Date/Time received 09/01/11 0930 CoC No. RC-214-40, 41, 43, 46, 47, 48, 52, 58, 63, 64, 65

Container I.D. No. GWS-184 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 14 Sample Matrix X SOLID
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH N/A Preservative _____
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 09/01/11 Time: 1115

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
All Samples	<80						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100 482 Calibration date 24 SEP 10

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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

RECEIVED
SEP 2011

19 September 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 #	1109013
SDG #	K3632
SAF #	RC-214
Date Received	09/01/11
# Samples	16
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	X
Pest/PCB	
Glycols	
DRO/KRO/GRO	
PAHs	
Herbicides	
Metals	X
Inorganics	

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

Sincerely,

Lionville Laboratory
A Division of Eberline Analytical Corporation

Orlette S. Johnson
Project Manager

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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

RECEIVED
SEP 2011

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/19/2011 09:19

Analytical Report for Semivolatile Organic Compounds by SW846 8270C

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1HJ64	1109013-02	Other Solid	08/27/2011 09:15	09/01/2011 10:00
J1HJ67	1109013-05	Other Solid	08/24/2011 11:10	09/01/2011 10:00
J1HJ72	1109013-06	Other Solid	08/24/2011 09:55	09/01/2011 10:00
J1HJ77	1109013-11	Other Solid	08/24/2011 09:50	09/01/2011 10:00
J1HJ79	1109013-13	Other Solid	08/24/2011 10:44	09/01/2011 10:00
J1HJ80	1109013-14	Other Solid	08/24/2011 09:55	09/01/2011 10:00
J1HJ81	1109013-15	Other Solid	08/24/2011 11:15	09/01/2011 10:00
J1HJ82	1109013-16	Other Solid	08/27/2011 09:20	09/01/2011 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-214 K3632
LVL #: 1109013

W.O. #: 60049-001-001-0001-00
Date Received: 09-01-2011

SEMIVOLATILE

Eight (8) other solid samples were collected on 08-24,27,-2011.

The samples and associated QC samples were extracted 09-04-2011 and analyzed 09-07,09,10-2011 according to Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3540C, and the analysis procedure was based on SW846 Method 8270C for client specified target compounds.

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. Discrepancies from the sample acceptance policy have been recorded on the Sample Receipt Checklist.

2. The samples were extracted and analyzed within holding time.

3. Non-target compounds were detected in these samples.

4. Due to the sample matrix, the samples were extracted with a reduced initial volume. Reporting limits have been adjusted to reflect this change.

5. The following extracted samples required dilution due to the nature of the matrix. The samples J1HJ67 and J1HJ72 required a 2X dilution; reporting limits have been adjusted to reflect the necessary dilutions.

6. Four (4) of seventy-two (72) surrogate recoveries were outside acceptance criteria. The surrogate recovery criteria were not met for samples J1HJ77 and J1HJ72. A copy of the Sample Discrepancy Report (SDR#11MS117) has been enclosed.

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

8. All blank spike recoveries were within acceptance criteria.

9. All matrix spike recoveries were within acceptance criteria.

10. The samples were reported on a wet weight 'as received' basis.

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

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

12. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

13. Internal standard area and retention time criteria were met for all except sample L109049-BS1. The out of criteria sample was re-analyzed on 09-09-2011 with similar results. Only the initial analysis has been reported.

14. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

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 hardcopy package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Iain Daniels
LvL Laboratory Manager

9/19/11
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 1105117

Initiator: Shanfaylor
Date: 9-16-11
Client: Wilkinsburg RC-214

Batch: 1109013
Samples: ~~JH~~ JIHJ77
Method: ~~SW846~~/MCAWW/CLP/ 12/19-16-11

Parameter: 8270
Matrix: Other-solid
Prep Batch: L109049

1. Reason for SDR

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

b. General Discrepancy

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

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

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

Sample JIHJ77 had 4 surrogate recoveries outside QC acceptance Limits. Sample JIHJ72 surrogate 2,4,6 Tribromophenol below lac acceptance criteria

9/19/11

2. Known or Probable Causes(s)

possible matrix effect - samples were gsb

3. Discussion and Proposed Action Other Description: namely

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

4. Project Manager Instructions...signature/date: 9/16/11

✓ 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: JES 9-19-2011 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
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

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

QA-139-A-0208

000000004

GLOSSARY

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concetration 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. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

A = Indicates that a TIC is a suspected aldol-condensation product.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike 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	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

MP	-	Missed Peak: Manually added peak not found by automatic quan program.
PA	-	Peak Assignment: quan report was changed to reflect correct peak assignment.
RI	-	Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
SP	-	Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
CB	-	Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal., or other interference.
PI	-	Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

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

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/19/2011 09:19

J1HJ64
1109013-02 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
Acenaphthene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Acenaphthylene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Anthracene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benz[a]anthracene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[a] pyrene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[b] fluoranthene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[g,h,i] perylene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[k] fluoranthene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Chrysene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Dibenz[a,h]anthracene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Fluoranthene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Fluorene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Indeno[1,2,3-cd]pyrene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Naphthalene	**357 J**	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Phenanthrene	**240 J**	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Pyrene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 2	**3580 J**		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 1	**4910 J**		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:PAH 1	**4430 J**		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Aldol Condensate 1	**221000 A, B, J**		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Alkane 1	**2940 J**		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Surrogate: 2-Fluorophenol	*77 %*	*25-121*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: Phenol-d5	*82 %*	*24-113*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: Nitrobenzene-d5	*76 %*	*23-120*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: 2-Fluorobiphenyl	*83 %*	*30-115*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*62 %*	*19-122*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: p-Terphenyl-d14	*88 %*	*18-137*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*

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

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/19/2011 09:19

J1HJ67
1109013-05 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Semivolatile Organic Compounds by SW846 8270C								
Acenaphthene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Acenaphthylene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Anthracene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Benz[a]anthracene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Benzo[a] pyrene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Benzo[b] fluoranthene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Benzo[g,h,i] perylene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Benzo[k] fluoranthene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Chrysene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Dibenz[a,h]anthracene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Fluoranthene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Fluorene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Indeno[1,2,3-cd]pyrene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Naphthalene	**691** J, D	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Phenanthrene	**250** J, D	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Pyrene	1270 U	1270	ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
TIC:PAH 1	**11300** J, D		ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
TIC:Aldol Condensate 1	**4470** A, B, J, D		ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
TIC:Alkane 1	**4530** J, D		ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
TIC:Alkane 2	**5510** J, D		ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
TIC:Aldol Condensate 2	**84700** A, B, J, D		ug/kg wet	2	L109049	09/04/2011	09/10/2011	8270C
Surrogate: 2-Fluorophenol	*77 %*	*25-121*			*L109049*	*09/04/2011*	*09/10/2011*	*8270C*
Surrogate: Phenol-d5	*74 %*	*24-113*			*L109049*	*09/04/2011*	*09/10/2011*	*8270C*
Surrogate: Nitrobenzene-d5	*73 %*	*23-120*			*L109049*	*09/04/2011*	*09/10/2011*	*8270C*
Surrogate: 2-Fluorobiphenyl	*74 %*	*30-115*			*L109049*	*09/04/2011*	*09/10/2011*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*36 %*	*19-122*			*L109049*	*09/04/2011*	*09/10/2011*	*8270C*
Surrogate: p-Terphenyl-d14	*75 %*	*18-137*			*L109049*	*09/04/2011*	*09/10/2011*	*8270C*

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/19/2011 09:19

J1HJ72
1109013-06 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C									
Acenaphthene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Acenaphthylene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Anthracene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Benz[a]anthracene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Benzo[a] pyrene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Benzo[b] fluoranthene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Benzo[g,h,i] perylene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Benzo[k] fluoranthene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Chrysene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Dibenz[a,h]anthracene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Fluoranthene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Fluorene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Indeno[1,2,3-cd]pyrene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Naphthalene	**464**	J, D	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Phenanthrene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Pyrene	1260	U	1260	ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
TIC:Unknown 1	**2550**	B, J, D		ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
TIC:Aldol Condensate 1	**4460**	A, B, J, D		ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
TIC:Aldol Condensate 2	**108000**	A, B, J, D		ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
TIC:Alkane 1	**3970**	J, D		ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
TIC:Alkane 2	**2110**	J, D		ug/kg wet	2	L109049	09/04/2011	09/11/2011	8270C
Surrogate: 2-Fluorophenol	*56 %*		*25-121*			*L109049*	*09/04/2011*	*09/11/2011*	*8270C*
Surrogate: Phenol-d5	*59 %*		*24-113*			*L109049*	*09/04/2011*	*09/11/2011*	*8270C*
Surrogate: Nitrobenzene-d5	*62 %*		*23-120*			*L109049*	*09/04/2011*	*09/11/2011*	*8270C*
Surrogate: 2-Fluorobiphenyl	*66 %*		*30-115*			*L109049*	*09/04/2011*	*09/11/2011*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*10 % **		*19-122*			*L109049*	*09/04/2011*	*09/11/2011*	*8270C*
Surrogate: p-Terphenyl-d14	*73 %*		*18-137*			*L109049*	*09/04/2011*	*09/11/2011*	*8270C*

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

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/19/2011 09:19

J1HJ77
1109013-11 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C								
Acenaphthene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Acenaphthylene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Anthracene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benz[a]anthracene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benzo[a] pyrene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benzo[b] fluoranthene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benzo[g,h,i] perylene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benzo[k] fluoranthene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Chrysene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Dibenz[a,h]anthracene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Fluoranthene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Fluorene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Indeno[1,2,3-cd]pyrene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Naphthalene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Phenanthrene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Pyrene	651 U	651	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:PAH 1	**871** J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:Unknown 2	**717** J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:Aldo Condensate 1	**769** A, B, J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:Aldol Condensate 2	**51700** A, B, J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:Unknown 1	**953** J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Surrogate: 2-Fluorophenol	*24 % **	*25-121*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: Phenol-d5	*26 %*	*24-113*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: Nitrobenzene-d5	*24 %*	*23-120*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: 2-Fluorobiphenyl	*28 % **	*30-115*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*16 % **	*19-122*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: p-Terphenyl-d14	*27 %*	*18-137*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/19/2011 09:19

J1HJ79
1109013-13 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C								
Acenaphthene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Acenaphthylene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Anthracene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benz[a]anthracene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benzo[a] pyrene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benzo[b] fluoranthene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benzo[g,h,i] perylene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Benzo[k] fluoranthene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Chrysene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Dibenz[a,h]anthracene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Fluoranthene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Fluorene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Indeno[1,2,3-cd]pyrene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Naphthalene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Phenanthrene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Pyrene	625 U	625	ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:Unknown 2	**484** J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:Unknown 1	**278** B, J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:Aldol Condensate 1	**2000** A, B, J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:Aldol Condensate 2	**193000** A, B, J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
TIC:Aldol Condensate 3	**280** A, B, J		ug/kg wet	1	L109049	09/04/2011	09/07/2011	8270C
Surrogate: 2-Fluorophenol	*62 %*	*25-121*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: Phenol-d5	*66 %*	*24-113*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: Nitrobenzene-d5	*73 %*	*23-120*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: 2-Fluorobiphenyl	*73 %*	*30-115*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*54 %*	*19-122*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*
Surrogate: p-Terphenyl-d14	*69 %*	*18-137*			*L109049*	*09/04/2011*	*09/07/2011*	*8270C*

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/19/2011 09:19

J1HJ80
1109013-14 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Semivolatile Organic Compounds by SW846 8270C								
Acenaphthene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Acenaphthylene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Anthracene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benz[a]anthracene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[a] pyrene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[b] fluoranthene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[g,h,i] perylene	**585** J	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[k] fluoranthene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Chrysene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Dibenz[a,h]anthracene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Fluoranthene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Fluorene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Indeno[1,2,3-cd]pyrene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Naphthalene	**137** J	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Phenanthrene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Pyrene	656 U	656	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 1	**4540** B, J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 2	**3130** J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Aldol Condensate 1	**394000** A, B, J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 3	**5130** J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Alkane 1	**3250** J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Surrogate: 2-Fluorophenol	*73 %*	*25-121*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: Phenol-d5	*90 %*	*24-113*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: Nitrobenzene-d5	*106 %*	*23-120*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: 2-Fluorobiphenyl	*105 %*	*30-115*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*40 %*	*19-122*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: p-Terphenyl-d14	*119 %*	*18-137*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*

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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-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/19/2011 09:19

J1HJ81
1109013-15 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Semivolatile Organic Compounds by SW846 8270C									
Acenaphthene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Acenaphthylene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Anthracene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benz[a]anthracene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[a] pyrene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[b] fluoranthene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[g,h,i] perylene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[k] fluoranthene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Chrysene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Dibenz[a,h]anthracene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Fluoranthene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Fluorene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Indeno[1,2,3-cd]pyrene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Naphthalene	**181**	J	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Phenanthrene	**111**	J	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Pyrene	657	U	657	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:PAH 1	**23800**	J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:PAH 2	**21100**	J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 2	**25400**	J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 1	**11100**	J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Aldol Condensate 1	**281000**	A, B, J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Surrogate: 2-Fluorophenol	*57 %*		*25-121*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: Phenol-d5	*68 %*		*24-113*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: Nitrobenzene-d5	*84 %*		*23-120*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: 2-Fluorobiphenyl	*80 %*		*30-115*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*32 %*		*19-122*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: p-Terphenyl-d14	*98 %*		*18-137*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*

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

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/19/2011 09:19

J1HJ82
1109013-16 (Other Solid)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Semivolatile Organic Compounds by SW846 8270C								
Acenaphthene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Acenaphthylene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Anthracene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benz[a]anthracene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[a] pyrene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[b] fluoranthene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[g,h,i] perylene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Benzo[k] fluoranthene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Chrysene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Dibenz[a,h]anthracene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Fluoranthene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Fluorene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Indeno[1,2,3-cd]pyrene	633 U	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Naphthalene	**174** J	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Phenanthrene	**110** J	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Pyrene	**104** J	633	ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 1	**8100** B, J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 3	**8520** J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Aldol Condensate 1	**345000** A, B, J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 2	**3660** J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
TIC:Unknown 4	**4020** J		ug/kg wet	1	L109049	09/04/2011	09/09/2011	8270C
Surrogate: 2-Fluorophenol	*46 %*	*25-121*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: Phenol-d5	*58 %*	*24-113*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: Nitrobenzene-d5	*74 %*	*23-120*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: 2-Fluorobiphenyl	*75 %*	*30-115*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*25 %*	*19-122*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*
Surrogate: p-Terphenyl-d14	*98 %*	*18-137*			*L109049*	*09/04/2011*	*09/09/2011*	*8270C*

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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-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/19/2011 09:19

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L109049 - SW 3540C									
Blank (L109049-BLK1)			Prepared: 09/04/2011 Analyzed: 09/07/2011						
Acenaphthene	330 U	330	ug/kg wet						
Acenaphthylene	330 U	330	ug/kg wet						
Anthracene	330 U	330	ug/kg wet						
Benz[a]anthracene	330 U	330	ug/kg wet						
Benzo[a] pyrene	330 U	330	ug/kg wet						
Benzo[b] fluoranthene	330 U	330	ug/kg wet						
Benzo[g,h,i] perylene	330 U	330	ug/kg wet						
Benzo[k] fluoranthene	330 U	330	ug/kg wet						
Chrysene	330 U	330	ug/kg wet						
Dibenz[a,h]anthracene	330 U	330	ug/kg wet						
Fluoranthene	330 U	330	ug/kg wet						
Fluorene	330 U	330	ug/kg wet						
Indeno[1,2,3-cd]pyrene	330 U	330	ug/kg wet						
Naphthalene	330 U	330	ug/kg wet						
Phenanthrene	330 U	330	ug/kg wet						
Pyrene	330 U	330	ug/kg wet						
Unknown 2	268 J		ug/kg wet						
Unknown 1	97.9 J		ug/kg wet						
Aldol Condensate 3	171 A, J		ug/kg wet						
Aldol Condensate 2	93900 A, J		ug/kg wet						
Aldol Condensate 1	1140 A, J		ug/kg wet						
Surrogate: 2-Fluorophenol	*1560*		*ug/kg wet*	*2500.0*		*62*	*25-121*		
Surrogate: Phenol-d5	*1660*		*ug/kg wet*	*2500.0*		*66*	*24-113*		
Surrogate: Nitrobenzene-d5	*1180*		*ug/kg wet*	*1666.7*		*71*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*1230*		*ug/kg wet*	*1666.7*		*74*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*1440*		*ug/kg wet*	*2500.0*		*58*	*19-122*		
Surrogate: p-Terphenyl-d14	*1320*		*ug/kg wet*	*1666.7*		*79*	*18-137*		

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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/19/2011 09:19

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L109049 - SW 3540C									
LCS (L109049-BS1)			Prepared: 09/04/2011 Analyzed: 09/07/2011						
Acenaphthene	1420	330	ug/kg wet	2000.0		71	45-110		40
Acenaphthylene	1470	330	ug/kg wet	2000.0		73	45-115		40
Anthracene	1430	330	ug/kg wet	2000.0		72	45-130		40
Benz[a]anthracene	1540	330	ug/kg wet	2000.0		77	45-130		40
Benzo[a] pyrene	1600	330	ug/kg wet	2000.0		80	45-130		40
Benzo[b] fluoranthene	1630	330	ug/kg wet	2000.0		81	40-130		40
Benzo[g,h,i] perylene	1780	330	ug/kg wet	2000.0		89	45-125		40
Benzo[k] fluoranthene	1560	330	ug/kg wet	2000.0		78	45-125		40
Chrysene	1520	330	ug/kg wet	2000.0		76	45-130		40
Dibenz[a,h]anthracene	1750	330	ug/kg wet	2000.0		87	45-125		40
Fluoranthene	1530	330	ug/kg wet	2000.0		76	45-130		40
Fluorene	1470	330	ug/kg wet	2000.0		74	45-120		40
Indeno[1,2,3-cd]pyrene	1780	330	ug/kg wet	2000.0		89	45-130		40
Naphthalene	1410	330	ug/kg wet	2000.0		71	40-110		40
Phenanthrene	1440	330	ug/kg wet	2000.0		72	50-120		40
Pyrene	1370	330	ug/kg wet	2000.0		68	45-125		40
Surrogate: 2-Fluorophenol	*1680*		*ug/kg wet*	*2500.0*		*67*	*25-121*		
Surrogate: Phenol-d5	*1870*		*ug/kg wet*	*2500.0*		*75*	*24-113*		
Surrogate: Nitrobenzene-d5	*1250*		*ug/kg wet*	*1666.7*		*75*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*1250*		*ug/kg wet*	*1666.7*		*75*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*1950*		*ug/kg wet*	*2500.0*		*78*	*19-122*		
Surrogate: p-Terphenyl-d14	*1210*		*ug/kg wet*	*1666.7*		*73*	*18-137*		
Matrix Spike (L109049-MS2)		**Source: 1109013-02**	Prepared: 09/04/2011 Analyzed: 09/09/2011						
Acenaphthene	3130	630	ug/kg wet	3819.2	633 U	82	45-110		40
Acenaphthylene	3050	630	ug/kg wet	3819.2	633 U	80	45-115		40
Anthracene	3370	630	ug/kg wet	3819.2	633 U	88	45-130		40
Benz[a]anthracene	3680	630	ug/kg wet	3819.2	633 U	96	45-130		40
Benzo[a] pyrene	3680	630	ug/kg wet	3819.2	633 U	96	45-130		40
Benzo[b] fluoranthene	4240	630	ug/kg wet	3819.2	633 U	111	40-130		40
Benzo[g,h,i] perylene	3190	630	ug/kg wet	3819.2	633 U	83	45-125		40
Benzo[k] fluoranthene	3920	630	ug/kg wet	3819.2	633 U	103	45-125		40
Chrysene	3800	630	ug/kg wet	3819.2	633 U	100	45-130		40
Dibenz[a,h]anthracene	3940	630	ug/kg wet	3819.2	633 U	103	45-125		40
Fluoranthene	3180	630	ug/kg wet	3819.2	633 U	83	45-130		40
Fluorene	2940	630	ug/kg wet	3819.2	633 U	77	45-120		40
Indeno[1,2,3-cd]pyrene	3590	630	ug/kg wet	3819.2	633 U	94	45-130		40

LVL
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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-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/19/2011 09:19

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L109049 - SW 3540C									
Matrix Spike (L109049-MS2)		**Source: 1109013-02**	Prepared: 09/04/2011 Analyzed: 09/09/2011						
Naphthalene	2440	630	ug/kg wet	3819.2	357	55	40-110		40
Phenanthrene	3440	630	ug/kg wet	3819.2	240	84	50-120		40
Pyrene	3990	630	ug/kg wet	3819.2	633 U	104	45-125		40
Surrogate: 2-Fluorophenol	*3720*		*ug/kg wet*	*4774.0*		*78*	*25-121*		
Surrogate: Phenol-d5	*4140*		*ug/kg wet*	*4774.0*		*87*	*24-113*		
Surrogate: Nitrobenzene-d5	*2140*		*ug/kg wet*	*3182.7*		*67*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*2600*		*ug/kg wet*	*3182.7*		*82*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*3400*		*ug/kg wet*	*4774.0*		*71*	*19-122*		
Surrogate: p-Terphenyl-d14	*3470*		*ug/kg wet*	*3182.7*		*109*	*18-137*		
Matrix Spike Dup (L109049-MSD2)		**Source: 1109013-02**	Prepared: 09/04/2011 Analyzed: 09/09/2011						
Acenaphthene	3000	637	ug/kg wet	3861.0	633 U	78	45-110	5	40
Acenaphthylene	2840	637	ug/kg wet	3861.0	633 U	74	45-115	8	40
Anthracene	3090	637	ug/kg wet	3861.0	633 U	80	45-130	10	40
Benz[a]anthracene	3370	637	ug/kg wet	3861.0	633 U	87	45-130	10	40
Benzo[a] pyrene	3260	637	ug/kg wet	3861.0	633 U	84	45-130	13	40
Benzo[b] fluoranthene	3660	637	ug/kg wet	3861.0	633 U	95	40-130	16	40
Benzo[g,h,i] perylene	3250	637	ug/kg wet	3861.0	633 U	84	45-125	0.7	40
Benzo[k] fluoranthene	3310	637	ug/kg wet	3861.0	633 U	86	45-125	18	40
Chrysene	3390	637	ug/kg wet	3861.0	633 U	88	45-130	13	40
Dibenz[a,h]anthracene	3590	637	ug/kg wet	3861.0	633 U	93	45-125	10	40
Fluoranthene	2880	637	ug/kg wet	3861.0	633 U	75	45-130	11	40
Fluorene	2860	637	ug/kg wet	3861.0	633 U	74	45-120	4	40
Indeno[1,2,3-cd]pyrene	3280	637	ug/kg wet	3861.0	633 U	85	45-130	10	40
Naphthalene	3030	637	ug/kg wet	3861.0	357	69	40-110	23	40
Phenanthrene	3470	637	ug/kg wet	3861.0	240	84	50-120	0.04	40
Pyrene	3890	637	ug/kg wet	3861.0	633 U	101	45-125	4	40
Surrogate: 2-Fluorophenol	*3490*		*ug/kg wet*	*4826.3*		*72*	*25-121*		
Surrogate: Phenol-d5	*3930*		*ug/kg wet*	*4826.3*		*81*	*24-113*		
Surrogate: Nitrobenzene-d5	*2080*		*ug/kg wet*	*3217.5*		*65*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*2430*		*ug/kg wet*	*3217.5*		*76*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*3580*		*ug/kg wet*	*4826.3*		*74*	*19-122*		
Surrogate: p-Terphenyl-d14	*3220*		*ug/kg wet*	*3217.5*		*100*	*18-137*		

PREPARATION BENCH SHEET

L109049

Lionville Laboratory

Printed: 9/6/2011 3:00:40PM

Matrix: Solid **Prepared using: SVOCGCMS - SW 3540C** **Surrogate used: 1101302**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1109011-03	8270C SVOC (Client List)	09/04/2011 07:09	15.45	1				500	WC-Hanford, Inc.	PAH LIST
1109011-04	8270C SVOC (Client List)	09/04/2011 07:09	15.07	1				500	WC-Hanford, Inc.	PAH LIST
1109011-05	8270C SVOC (Client List)	09/04/2011 07:09	15.76	1				500	WC-Hanford, Inc.	PAH LIST
1109011-10	8270C SVOC (Client List)	09/04/2011 07:09	15.03	1				500	WC-Hanford, Inc.	PAH LIST
1109011-12	8270C SVOC (Client List)	09/04/2011 07:09	30.56	1				500	WC-Hanford, Inc.	PAH LIST
1109011-13	8270C SVOC (Client List)	09/04/2011 07:09	16.17	1				500	WC-Hanford, Inc.	PAH LIST
1109011-14	8270C SVOC (Client List)	09/04/2011 07:09	16.44	1				500	WC-Hanford, Inc.	PAH LIST
1109011-15	8270C SVOC (Client List)	09/04/2011 07:09	15.34	1				500	WC-Hanford, Inc.	PAH LIST
1109013-02	8270C SVOC (Client List)	09/04/2011 07:09	15.63	1				500	WC-Hanford, Inc.	PAH LIST
1109013-05	8270C SVOC (Client List)	09/04/2011 07:09	15.53	1				500	WC-Hanford, Inc.	PAH LIST
1109013-06	8270C SVOC (Client List)	09/04/2011 07:09	15.74	1				500	WC-Hanford, Inc.	PAH LIST
1109013-11	8270C SVOC (Client List)	09/04/2011 07:09	15.21	1				500	WC-Hanford, Inc.	PAH LIST
1109013-13	8270C SVOC (Client List)	09/04/2011 07:09	15.83	1				500	WC-Hanford, Inc.	PAH LIST
1109013-14	8270C SVOC (Client List)	09/04/2011 07:09	15.1	1				500	WC-Hanford, Inc.	PAH LIST
1109013-15	8270C SVOC (Client List)	09/04/2011 07:09	15.06	1				500	WC-Hanford, Inc.	PAH LIST
1109013-16	8270C SVOC (Client List)	09/04/2011 07:09	15.65	1				500	WC-Hanford, Inc.	PAH LIST
L109049-BLK1	QC	09/04/2011 07:09	30	1				500		
L109049-BS1	QC	09/04/2011 07:09	30	1	1100144		600	500		
L109049-MS1	QC	09/04/2011 07:09	15.38	1	1100144	1109011-03	600	500		
L109049-MS2	QC	09/04/2011 07:09	15.71	1	1100144	1109013-02	600	500		

Extracts Relinquished By Date 9/6/11 1510

Extracts Received By Date 9/7/11 1220 TEJ 9-7-11

PREPARATION BENCH SHEET

L109049

Lionville Laboratory

Printed: 9/6/2011 3:00:40PM

Matrix: Solid **Prepared using: SVOCGCMS - SW 3540C** **Surrogate used: 1101302**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
L109049-MSD1	QC	09/04/2011 07:09	15.2	1	1100144	1109011-03	600	500		
L109049-MSD2	QC	09/04/2011 07:09	15.54	1	1100144	1109013-02	600	500		

Extracts Relinquished By 9/6/11 1510 Date

Extracts Received By 9/7/11 1220 Date

Lionville Laboratory Use Only: 1109013

Custody Transfer Record/Lab Work Request

Page 1 of 2

Lionville Laboratory
A Division of Eberline Analytical Corporation

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC Hanford SAF# RC-214
Est. Final Proj. Sampling Date:
Project#:
Project Contact/Phone#:
Lionville Laboratory Project Manager: O Johnson
QC: SW Del: STD TAT: 15 days
Date Rec'd: 9-1-11 Date Due: 9-16-11

		A	B	CD
Refrigerator #		1	1	1
#/Type Container	Liquid			
	Solid	1AG	1AG	2P
Volume	Liquid			
	Solid	250	250	1000
Preservatives		–	–	–
ANALYSES REQUESTED	ORGANIC: VOA			
	ORGANIC: BNA			
	ORGANIC: Pest/PCB			
	ORGANIC: Herb	PAHs		
	INORG: Metal Hg		Met ①	
	INORG: CN			
	INORG:			Spec Ext.

Lionville Laboratory Use Only: 8270 8310 9/1/11 Met ①

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
01	THJ63			S	8-27-11	0940
02	64					0915
03	65					1112
04	66					1105
05	67				8-24-11	1110
06	72					0955
07	73				8-28-11	0929
08	76					0932
09	74				8-27-11	1050
10	75					1055

Special Instructions: Run matrix QC

met ① = Pb + B, Mn, Mo, U

Special Instructions:
* 1. Matrix = ASH, special extraction on hold per client
2.
3.
4.
5.
6. See SRC

Relinquished by	Received by	Date	Time
		9-1-11	
		9-1-11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL			
REWRITTEN			

000000021

Lionville Laboratory Use Only

1109 013

Custody Transfer Record/Lab Work Request

Lionville Laboratory
A Division of Eberline Analytical Corporation

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC Hanford SAF# BC-214
Est. Final Proj. Sampling Date:
Project#:
Project Contact/Phone#: PJ
Lionville Laboratory Project Manager: O-J-
QC: Del: TAT:
Date Rec'd: 9-1-11 Date Due:

		A					B				CD					
Refrigerator #					1			1			1					
#/Type Container	Liquid															
	Solid				1AC			1AC			2P					
Volume	Liquid															
	Solid				250			250			1000					
Preservatives					—			—			—					
ANALYSES REQUESTED →		ORGANIC						INORG								
		VOA	BNA	Pest/PCB	Herb	PAHs			Metal	CN		SPEC EXT				
Lionville Laboratory Use Only						8270 8310	9/1/11		Metals							

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												
11	JIHJ77			S	8/24/11	0950				X			X					
12	78				8-22-11	0940							X					
13	79				8-24-11	1044				X			X					
14	80					0955				X			X			X		
15	81					1115				X			X			X		
16	82				8-22-11	0920				X			X			X		

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9/1/11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

000000022

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-40	Page 1 of 1

Collector: Sparks	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE		SAF No.: RC-214
Ice Chest No.: GWS-172	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: 7951 3915 4737 ~~See OSPC~~ DLW 8/31/11

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							
Sample No. / Matrix * / Sample Date / Sample Time											
16 J1HJ63 / OTHER / 8-27-11 / 0940	X										
17 J1HJ64 / OTHER / 8-27-11 / 0915	X	X	X								
18 J1HJ65 / OTHER / 8-27-11 / 1112	X										
19 J1HJ66 / OTHER / 8-27-11 / 1105	X										
20 J1HJ67 / OTHER											

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Sparks	8-27-11 1500	SSU-1	8-27-11 1500
Relinquished By/Removed From: SSU-1	AUG 31 2011 1000	L.D. Wall	AUG 31 2011 1000
Relinquished By/Removed From: L.D. Wall	AUG 31 2011 1400	Received By/Stored In: FEDEX	Date/Time
Relinquished By/Removed From: FedEx	9-1-11 1000	Received By/Stored In: Victor Hernandez	9-1-11 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

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY DATE 82711

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

000000023

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-40	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE		SAF No.: RC-214
Ice Chest No.: GWS-16	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: 7951 3915 4601 ~~See OSPC~~

000000024

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

	Sample No.	Matrix *	Sample Date	Sample Time										
16	J1HJ63	OTHER												
17	J1HJ64	OTHER												
18	J1HJ65	OTHER												
19	J1HJ66	OTHER												
20	J1HJ67	OTHER	8/24/11	1110	✓	✓	✓							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: C. Fulton	Date/Time: 8/24/11 1200	Received By/Stored In: SSU#1	Date/Time: 8/24/11 1200
Relinquished By/Removed From: SSU-1	Date/Time: AUG 31 2011 0800	Received By/Stored In: L.D. Wall SUPPO	Date/Time: AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wall SUPPO	Date/Time: AUG 31 2011 1400	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FedEx	Date/Time: 9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 9-1-11 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

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY SPD DATE 8 24 11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-41	Page 1 of 1

Collector C. FULTON	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9C	Data Turnaround 15 Days
Project Designation Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location 126-H-1 SURFACE		SAF No. RC-214		
Ice Chest No. GWS-172	Field Logbook No. EL-1658	COA BESCAS6000	Method of Shipment FedEx		
Shipped To EBERLINE SERVICES / JONVILLE	Offsite Property No. 3055		Bill of Lading/Air Bill No. 7951 3915 4737 ~~See OSPC~~ DW 8/31/11		

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							
Sample No. / Matrix * / Sample Date / Sample Time											
21 J1HJ68 / OTHER											
22 J1HJ69 / OTHER											
23 J1HJ70 / OTHER											
24 J1HJ71 / OTHER											
25 J1HJ72 / OTHER / 8/24/11 / 0955	✓	✓	✓								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From C. Fulton	8/24/11 1200	SSU #1	8/24/11 1200
Relinquished By/Removed From SSU-1	AUG 31 2011 1000	Received By/Stored In L.D. Wall CHPRC	AUG 31 2011 1000
Relinquished By/Removed From L.D. Wall CHPRC	AUG 31 2011 1400	Received By/Stored In FEDEX	
Relinquished By/Removed From FedEx	9-1-11 1000	Received By/Stored In VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY DRD DATE 8 24 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

000000025

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-42	Page 1 of 1
Collector	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C; Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE	SAF No.: RC-214	
Ice Chest No.: GW5-216	Field Logbook No.: EL-1658; COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: 7951 3915 4689; ~~See 03PC~~ DW 8/31/11	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

	Sample No.	Matrix *	Sample Date	Sample Time										
26	J1HJ73	OTHER	8-28-11	0929	X									
27	J1HJ74	OTHER												
28	J1HJ75	OTHER												
29	J1HJ76	OTHER	8-28-11	0932	X									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From	8-28-11		8-28-11
Relinquished By/Removed From: SSU-1	AUG 31 2011 0800	Received By/Stored In: L.D. Wall CHPRC	AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wall CHPRC	AUG 31 2011 1400	Received By/Stored In: FEDEX	
Relinquished By/Removed From	9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY AD DATE 8/28/11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

000000026

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-42	Page 1 of 1
Collector: Sparks	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C; Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE	SAF No.: RC-214	
Ice Chest No.: GWS-216	Field Logbook No.: EL-1658; COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: 7951 3915 4689 ~~See USPC~~	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None	DOE 8/31/11						
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

	Sample No.	Matrix *	Sample Date	Sample Time										
26	J1HJ73	OTHER												
27	J1HJ74	OTHER	8-27-11	1050	X									
28	J1HJ75	OTHER	8-27-11	1055	X									
29	J1HJ76	OTHER												

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Sparks	Date/Time: 1500 8-27-11	Received By/Stored In: [signature]	Date/Time: 1500 8-27-11
Relinquished By/Removed From: SSU-1	Date/Time: AUG 31 2011 0800	Received By/Stored In: L.D. Wells	Date/Time: AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wells	Date/Time: AUG 31 2011 1400	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FedEx	Date/Time: 9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 9-1-11 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

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY [signature] DATE 82711

Matrix *

S=Soil
SE=Sediment
SO=Solid
SJ=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

000000027

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-43	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DUPLICATE		SAF No.: RC-214
Ice Chest No.: GWS-216	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: 7951 3915 4689

~~See USPC~~ LW 8/31/11

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation			None	Cool 4C	None	None					
Type of Container			G/P	aG	P	G/P					
No. of Container(s)			1	1	2	1					
Volume			250mL	250mL	1000mL	10mL					
SAMPLE ANALYSIS			See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Lithium					
Sample No.	Matrix *	Sample Date	Sample Time								
J1HJ77	OTHER	8/24/11	0950	✓	✓						

8/24/11 8/24/11

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: C. Fulton	Date/Time: 8/24/11 1200	Received By/Stored In: SSU #1	Date/Time: 8/24/11 1200
Relinquished By/Removed From: SSU-1	Date/Time: AUG 31 2011 0800	Received By/Stored In: L.D. Wall CHPRC	Date/Time: AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wall CHPRC	Date/Time: AUG 31 2011 1400	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FedEx	Date/Time: 9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 9-1-11 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

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY

DATE 8/24/11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

11

000000028

1

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-44	Page 1 of 1

Collector: Sparks	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DUPLICATE		SAF No.: RC-214
Ice Chest No.: GWS-216	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: 7951 3915 4689

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation			None	Cool 4C	None	None						
Type of Container			G/P	aG	P	G/P						
No. of Container(s)			1	1	2	1						
Volume			250mL	250mL	1000mL	10mL						
SAMPLE ANALYSIS			See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium						
Sample No.	Matrix *	Sample Date	Sample Time									
J1HJ78	OTHER	8-27-11	0940	X								

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: Sparks	Date/Time: 8-27-11 1500	Received By/Stored In: Suttl	Date/Time: 8-27-11 1500
Relinquished By/Removed From: SSU-1	Date/Time: AUG 31 2011 0800	Received By/Stored In: L.D. Wall	Date/Time: AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wall	Date/Time: AUG 31 2011 1400	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FEDEX	Date/Time: 9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 9-1-11 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

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY DATE 8 27 11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

000000029

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-45	Page 1 of 1
Collector: C. Fulton	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C; Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 EQUIPMENT BLANK	SAF No.: RC-214	
Ice Chest No.: GWS-216	Field Logbook No.: EL-1658; COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES/LIONVILLE	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: 7951 3915 4689	

000000030

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

N/A

SEE OSPC DW. 8/31/11

Preservation	None	Cool 4C										
Type of Container	G/P	aG										
No. of Container(s)	1	1										
Volume	250mL	250mL										
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270										
Sample No. / Matrix * / Sample Date / Sample Time												
J1HJ79 / OTHER / 8/24/11 / 1044	X	X										

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
C. Fulton	8/24/11 1100	SSU#1	8/24/11 1100
SSU-1	AUG 31 2011 0800	L.D. Wall CHPRC	AUG 31 2011 0800
L.D. Wall CHPRC	AUG 31 2011 1400	FEDEX	
FEDEX	9-1-11 1000	VICTOR HERNANDEZ	9-1-11 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 (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY SPS DATE 02/9/11

Matrix *: S=Soil; SE=Sediment; SO=Solid; SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-46	Page 1 of 1

Collector: C. FULTON	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH		SAF No.: RC-214
Ice Chest No.: GWS-16	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LONVILLE	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: ~~See OSPC~~ 7951 3915 4601

000000031

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	4	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							
Sample No. / Matrix * / Sample Date / Sample Time											
J1HJ80 / OTHER / 8/24/11 / 0955	✓	✓	✓								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	C. FULTON	8/24/11 1500	SSU-H1	8/24/11 1500
Relinquished By/Removed From	SSU-1	AUG 31 2011 0800	Received By/Stored In: L.D. Wall CHPRC	AUG 31 2011 0800
Relinquished By/Removed From	L.D. Wall CHPRC	AUG 31 2011 1400	Received By/Stored In: FEDEX	
Relinquished By/Removed From	Fed Ex	9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) (Mercury)

REVIEWED BY
DATE 8/24/11

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-47	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH		SAF No.: RC-214
Ice Chest No.: GWS-16	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: ~~See OSPC~~ 7951 3915 4601

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	4	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

Sample No.	Matrix *	Sample Date	Sample Time										
J1HJ81	OTHER	8/24/11	~~1110~~ 1115	✓	✓	✓							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: C Fulton	8/24/11 1200	Received By/Stored In: SSU #1	8/24/11 1200
Relinquished By/Removed From: SSU-1	AUG 31 2011 0800	Received By/Stored In: L.D. Wall	AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wall	AUG 31 2011 1400	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FedEx	9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY
DATE 8/24/11

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

000000032

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-48	Page 1 of 1
Collector: Sparks	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH Sample point 17	SAF No.: RC-214	
Ice Chest No.: GW5-172	Field Logbook No.: EL-1658 COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: See ~~03PC~~ 7951 3915 4737	

000000033

POSSIBLE SAMPLE ~~HAZARDS~~/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None	8/31/11						
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	4	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							
Sample No. / Matrix * / Sample Date / Sample Time											
J1HJ82 / OTHER / 8-22-11 / 0920	X	X	X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Sparks	Date/Time: 8-22-11 1500	Received By/Stored In: SSU-1	Date/Time: 8-22-11 1500
Relinquished By/Removed From: SSU-1	Date/Time: AUG 31 2011 1000	Received By/Stored In: L.D. Wall CHPRC L.D. Wall	Date/Time: AUG 31 2011 1000
Relinquished By/Removed From: L.D. Wall CHPRC L.D. Wall	Date/Time: AUG 31 2011 1400	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FedEx	Date/Time: 9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 9-1-11 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

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY
DATE 5-27-11

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=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

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford

Project/SAF/SOW/Release #: RC-214

Date: 9/1/11

LvL Batch #: 1109013

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7951 3915 4737 4689 4601
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☐ Yes	☑ No	☐ No Seals Cooler GWS 172 Seal not in TACK BAGS SEALED.
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 3.4 3.6 2.3	°C	Cooler # GWS-172 216 16
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 O.T.		Date 9-1-11	

000000034

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

RECEIVED
SEP 2011

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/15/2011 11:24

Analytical Report for Metals by SW846 6000/7000 series

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1HJ63	1109013-01	Other Solid	08/27/2011 09:40	09/01/2011 10:00
J1HJ64	1109013-02	Other Solid	08/27/2011 09:15	09/01/2011 10:00
J1HJ65	1109013-03	Other Solid	08/27/2011 11:12	09/01/2011 10:00
J1HJ66	1109013-04	Other Solid	08/27/2011 11:05	09/01/2011 10:00
J1HJ67	1109013-05	Other Solid	08/24/2011 11:10	09/01/2011 10:00
J1HJ72	1109013-06	Other Solid	08/24/2011 09:55	09/01/2011 10:00
J1HJ73	1109013-07	Other Solid	08/28/2011 09:29	09/01/2011 10:00
J1HJ76	1109013-08	Other Solid	08/28/2011 09:32	09/01/2011 10:00
J1HJ74	1109013-09	Other Solid	08/27/2011 10:50	09/01/2011 10:00
J1HJ75	1109013-10	Other Solid	08/27/2011 10:55	09/01/2011 10:00
J1HJ77	1109013-11	Other Solid	08/24/2011 09:50	09/01/2011 10:00
J1HJ78	1109013-12	Other Solid	08/27/2011 09:40	09/01/2011 10:00
J1HJ79	1109013-13	Other Solid	08/24/2011 10:44	09/01/2011 10:00
J1HJ80	1109013-14	Other Solid	08/24/2011 09:55	09/01/2011 10:00
J1HJ81	1109013-15	Other Solid	08/24/2011 11:15	09/01/2011 10:00
J1HJ82	1109013-16	Other Solid	08/27/2011 09:20	09/01/2011 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-214
LVL#: 1109013
SDG/SAF#: K3632/RC-214

W.O.#: 60049-001-001-0001-00
Date Received: 09-01-11

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 16 other solid samples.

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

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

4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvLI's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits.

7. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation, samples greater than 20X MB value}.

8. All ICP Interference Check Standards were within control limits.

9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer. There is no Uranium result for reference sample L109104-SRM1 due to the standard reference material does not contain Uranium. The soil samples were reported for Uranium as per the project manager.

10. The matrix spike (MS) recoveries for 17 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

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 40 pages.

dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J1HJ63	Antimony	100	94.6
	Arsenic	100	104.5
	Barium	1,100	90.7
	Boron	1,100	82.1
	Chromium	100	104.1
	Cobalt	100	100.1
	Copper	100	96.9
	Lead	100	90.0
	Manganese	1,000	70.3
	Molybdenum	100	100.0
	Nickel	100	95.2
	Selenium	100	106.8
	Silver	100	89.1
	Thallium	100	88.8
	Uranium	1,000	79.8
	Zinc	1,100	88.7
	Mercury	1.0	112.0

12. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. The ± 20% RPD control limit applies to sample results greater than ten times the MDL. The sample result for Mercury 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

9/16/11
Date

alm/09-013hgn%

LIONVILLE LABORATORY
A division of Chemtrol Analytical Corporation

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

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

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-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ63
1109013-01 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.526	U	0.526	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**3.46**		0.877	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**783**		0.439	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**0.842**		0.175	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**46.7**		1.75	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.180**		0.175	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**9.38**		0.175	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**7.98**		1.75	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**42.1**		0.877	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**2.46**		0.439	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**134**		4.39	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**1.51**	B	1.75	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**20.4**		3.51	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	0.263	U	0.263	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.175	U	0.175	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.439	U	0.439	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	17.5	U	17.5	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**50.6**		2.19	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**16.3**		8.77	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0153**	B	0.0290	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ64
1109013-02 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.492	U	0.492	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**2.51**		0.820	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**527**		0.410	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**0.833**		0.164	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**145**		1.64	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.148**	B	0.164	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**8.57**		0.164	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**2.14**		1.64	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**16.7**		0.820	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**4.40**		0.410	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**67.7**		4.10	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**0.708**	B	1.64	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**5.88**		3.28	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	**0.762**		0.246	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.164	U	0.164	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.410	U	0.410	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	16.4	U	16.4	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**23.8**		2.05	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**14.1**		8.20	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0488**		0.0281	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ65
1109013-03 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.545	U	0.545	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**3.34**		0.909	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**506**		0.455	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**1.00**		0.182	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**150**		1.82	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.212**		0.182	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**10.9**		0.182	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**2.53**		1.82	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**20.6**		0.909	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**6.99**		0.455	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**81.8**		4.55	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**0.786**	B	1.82	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**7.05**		3.64	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	**1.49**		0.273	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.182	U	0.182	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.455	U	0.455	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	18.2	U	18.2	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**26.6**		2.27	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**22.5**		9.09	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.129**		0.0273	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ66
1109013-04 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.566	U	0.566	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**3.90**		0.943	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**760**		0.472	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**0.941**		0.189	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**41.5**		1.89	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.176**	B	0.189	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**10.6**		0.189	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**9.01**		1.89	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**46.8**		0.943	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**1.96**		0.472	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**154**		4.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**2.11**		1.89	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**22.4**		3.77	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	0.283	U	0.283	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.189	U	0.189	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.472	U	0.472	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	18.9	U	18.9	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**58.4**		2.36	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**17.2**		9.43	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	0.0250	U	0.0250	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ67
1109013-05 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.508	U	0.508	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**2.94**		0.847	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**916**		0.424	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**1.31**		0.169	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**455**		1.69	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.178**		0.169	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**16.5**		0.169	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**3.77**		1.69	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**33.8**		0.847	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**4.25**		0.424	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**122**		4.24	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**2.44**		1.69	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**10.9**		3.39	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	**0.341**		0.254	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.169	U	0.169	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.424	U	0.424	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	16.9	U	16.9	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**42.2**		2.12	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**20.1**		8.47	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0184**	B	0.0265	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/15/2011 11:24

J1HJ72
1109013-06 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Antimony	0.476	U	0.476	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**2.55**		0.794	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**954**		0.397	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**1.05**		0.159	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**235**		1.59	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.217**		0.159	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**12.3**		0.159	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**3.66**		1.59	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**24.0**		0.794	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**5.02**		0.397	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**153**		3.97	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**1.44**	B	1.59	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**10.1**		3.17	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	**0.338**		0.238	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.159	U	0.159	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.397	U	0.397	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	15.9	U	15.9	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**33.8**		1.98	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**28.9**		7.94	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0271**		0.0257	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ73
1109013-07 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.517	U	0.517	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**3.78**		0.862	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**846**		0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**0.830**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**102**		1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.244**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**14.1**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**8.25**		1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**30.7**		0.862	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**5.82**		0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**283**		4.31	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**1.25**	B	1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**15.6**		3.45	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	0.259	U	0.259	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.172	U	0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.431	U	0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	17.2	U	17.2	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**52.6**		2.16	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**48.6**		8.62	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0718**		0.0243	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ76
1109013-08 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.517	U	0.517	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**3.60**		0.862	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**1330**		0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**1.44**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**243**		1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.347**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**10.7**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**9.94**		1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**31.7**		0.862	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**4.77**		0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**300**		4.31	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**2.05**		1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**17.8**		3.45	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	**0.349**		0.259	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.172	U	0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.431	U	0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	17.2	U	17.2	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**44.5**		2.16	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**47.9**		8.62	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0747**		0.0281	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ74
1109013-09 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Antimony	0.476	U	0.476	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**2.28**		0.794	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**816**		0.397	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**0.654**		0.159	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**24.0**		1.59	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.159**	B	0.159	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**7.39**		0.159	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**6.80**		1.59	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**35.4**		0.794	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**2.50**		0.397	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**78.8**		3.97	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**1.40**	B	1.59	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**17.8**		3.17	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	0.238	U	0.238	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.159	U	0.159	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.397	U	0.397	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	15.9	U	15.9	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**42.6**		1.98	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**13.9**		7.94	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0113**	B	0.0257	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ75
1109013-10 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.556	U	0.556	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**3.70**		0.926	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**1020**		0.463	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**1.04**		0.185	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**84.5**		1.85	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.233**		0.185	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**11.5**		0.185	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**7.72**		1.85	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**42.4**		0.926	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**4.26**		0.463	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**141**		4.63	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**1.81**	B	1.85	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**19.2**		3.70	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	**0.510**		0.278	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.185	U	0.185	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.463	U	0.463	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	18.5	U	18.5	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**54.4**		2.31	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**24.6**		9.26	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0510**		0.0250	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/15/2011 11:24

J1HJ77
1109013-11 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.517	U	0.517	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**2.82**		0.862	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**1080**		0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**1.11**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**253**		1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.183**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**12.5**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**3.82**		1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**23.7**		0.862	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**5.21**		0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**122**		4.31	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**1.49**	B	1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**10.2**		3.45	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	**0.504**		0.259	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.172	U	0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.431	U	0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	17.2	U	17.2	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**33.3**		2.16	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**19.5**		8.62	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0191**	B	0.0265	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
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Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ78
1109013-12 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	**0.296**	B	0.577	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**3.01**		0.962	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**773**		0.481	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**0.901**		0.192	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**52.5**		1.92	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.176**	B	0.192	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**9.75**		0.192	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**8.83**		1.92	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**44.9**		0.962	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**2.32**		0.481	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**135**		4.81	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**1.78**	B	1.92	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**20.4**		3.85	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	0.288	U	0.288	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.192	U	0.192	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.481	U	0.481	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	19.2	U	19.2	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**52.1**		2.40	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**15.2**		9.62	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0291**		0.0281	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
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Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ79
1109013-13 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.417	U	0.417	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**1.55**		0.694	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**2.33**		0.347	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**0.0844**	B	0.139	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	1.39	U	1.39	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	0.139	U	0.139	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**0.427**		0.139	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	1.39	U	1.39	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	0.694	U	0.694	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**1.12**		0.347	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**7.47**		3.47	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	1.39	U	1.39	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	2.78	U	2.78	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	0.208	U	0.208	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.139	U	0.139	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.347	U	0.347	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	13.9	U	13.9	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**1.01**	B	1.74	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**4.53**	B	6.94	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	0.0237	U	0.0237	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ80
1109013-14 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.517	U	0.517	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**11.7**		0.862	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**1000**		0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**1.28**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**404**		1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.200**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**11.2**		0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**2.42**		1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**22.7**		0.862	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**132**		0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**90.9**		4.31	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**1.41**	B	1.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**6.96**		3.45	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	0.259	U	0.259	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.172	U	0.172	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.431	U	0.431	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	17.2	U	17.2	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**27.0**		2.16	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**31.3**		8.62	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0352**		0.0273	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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Exton, PA 19341
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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ81
1109013-15 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.545	U	0.545	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	2.24		0.909	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	709		0.455	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	0.691		0.182	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	199		1.82	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	0.184		0.182	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	9.62		0.182	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	3.52		1.82	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	25.3		0.909	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	18.3		0.455	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	148		4.55	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	1.96		1.82	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	10.6		3.64	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	0.273	U	0.273	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.182	U	0.182	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.455	U	0.455	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	18.2	U	18.2	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	28.9		2.27	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	21.0		9.09	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	0.863		0.0231	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
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Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

J1HJ82
1109013-16 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.566	U	0.566	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Arsenic	**2.79**		0.943	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Barium	**487**		0.472	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Beryllium	**1.15**		0.189	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Boron	**245**		1.89	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cadmium	**0.252**		0.189	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Chromium	**8.52**		0.189	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Cobalt	**1.72**	B	1.89	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Copper	**18.1**		0.943	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Lead	**27.3**		0.472	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Manganese	**82.1**		4.72	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Molybdenum	**0.916**	B	1.89	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Nickel	**4.79**		3.77	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Selenium	**1.18**		0.283	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Silver	0.189	U	0.189	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Thallium	0.472	U	0.472	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Uranium	18.9	U	18.9	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Vanadium	**19.6**		2.36	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Zinc	**25.7**		9.43	mg/kg wet	1	L109104	09/08/2011	09/11/2011	6010B
Mercury	**0.0530**		0.0281	mg/kg wet	1	L109137	09/12/2011	09/14/2011	7471A

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2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

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 L109104 - SW 3050B										
Blank (L109104-BLK1)				Prepared: 09/08/2011 Analyzed: 09/11/2011						
Antimony	0.492	U	0.492	mg/kg wet						
Arsenic	0.820	U	0.820	mg/kg wet						
Barium	0.410	U	0.410	mg/kg wet						
Beryllium	0.164	U	0.164	mg/kg wet						
Boron	1.64	U	1.64	mg/kg wet						
Cadmium	0.164	U	0.164	mg/kg wet						
Chromium	0.164	U	0.164	mg/kg wet						
Cobalt	1.64	U	1.64	mg/kg wet						
Copper	0.820	U	0.820	mg/kg wet						
Lead	0.410	U	0.410	mg/kg wet						
Manganese	4.10	U	4.10	mg/kg wet						
Molybdenum	1.64	U	1.64	mg/kg wet						
Nickel	3.28	U	3.28	mg/kg wet						
Selenium	0.246	U	0.246	mg/kg wet						
Silver	0.164	U	0.164	mg/kg wet						
Thallium	0.410	U	0.410	mg/kg wet						
Uranium	16.4	U	16.4	mg/kg wet						
Vanadium	2.05	U	2.05	mg/kg wet						
Zinc	1.33	B	8.20	mg/kg wet						
Duplicate (L109104-DUP1)		Source: 1109013-01		Prepared: 09/08/2011 Analyzed: 09/11/2011						
Antimony	0.526	U	0.526	mg/kg wet		0.526 U				20
Arsenic	2.89		0.877	mg/kg wet		3.46			17.7	20
Barium	728		0.439	mg/kg wet		783			7.34	20
Beryllium	0.775		0.175	mg/kg wet		0.842			8.33	20
Boron	48.4		1.75	mg/kg wet		46.7			3.54	20
Cadmium	0.174	B	0.175	mg/kg wet		0.180			3.18	20
Chromium	8.79		0.175	mg/kg wet		9.38			6.47	20
Cobalt	7.47		1.75	mg/kg wet		7.98			6.69	20
Copper	44.8		0.877	mg/kg wet		42.1			6.05	20
Lead	2.13		0.439	mg/kg wet		2.46			14.3	20
Manganese	124		4.39	mg/kg wet		134			8.22	20
Molybdenum	1.51	B	1.75	mg/kg wet		1.51			0.00	20
Nickel	18.3		3.51	mg/kg wet		20.4			10.6	20
Selenium	0.263	U	0.263	mg/kg wet		0.263 U				20
Silver	0.175	U	0.175	mg/kg wet		0.175 U				20
Thallium	0.439	U	0.439	mg/kg wet		0.439 U				20

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2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

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 L109104 - SW 3050B										
Duplicate (L109104-DUP1)		**Source: 1109013-01**		Prepared: 09/08/2011 Analyzed: 09/11/2011						
Uranium	17.5	U	17.5	mg/kg wet		17.5 U				20
Vanadium	46.6		2.19	mg/kg wet		50.6			8.08	20
Zinc	15.2		8.77	mg/kg wet		16.3			6.84	20
Matrix Spike (L109104-MS1)		**Source: 1109013-01**		Prepared: 09/08/2011 Analyzed: 09/11/2011						
Antimony	11.5		0.429	mg/kg wet	35.714	0.526 U	32.3*	75-125		20
Arsenic	108		0.714	mg/kg wet	142.86	3.46	73.3*	75-125		20
Barium	1290		0.357	mg/kg wet	142.86	783	354*	75-125		20
Beryllium	3.65		0.143	mg/kg wet	3.5714	0.842	78.7	75-125		20
Boron	198		1.43	mg/kg wet	71.429	46.7	212*	75-125		20
Cadmium	2.96		0.143	mg/kg wet	3.5714	0.180	77.8	75-125		20
Chromium	19.4		0.143	mg/kg wet	14.286	9.38	70.1*	75-125		20
Cobalt	33.2		1.43	mg/kg wet	35.714	7.98	70.5*	75-125		20
Copper	54.6		0.714	mg/kg wet	17.857	42.1	70.0*	75-125		20
Lead	25.2		0.357	mg/kg wet	35.714	2.46	63.5*	75-125		20
Manganese	153		3.57	mg/kg wet	35.714	134	51.1*	75-125		20
Molybdenum	53.8		1.43	mg/kg wet	71.429	1.51	73.2*	75-125		20
Nickel	43.7		2.86	mg/kg wet	35.714	20.4	65.3*	75-125		20
Selenium	100		0.214	mg/kg wet	142.86	0.263 U	70.2*	75-125		20
Silver	2.56		0.143	mg/kg wet	3.5714	0.175 U	71.7*	75-125		20
Thallium	89.4		0.357	mg/kg wet	142.86	0.439 U	62.6*	75-125		20
Uranium	257		14.3	mg/kg wet	357.14	17.5 U	72.1*	75-125		20
Vanadium	77.8		1.79	mg/kg wet	35.714	50.6	76.2	75-125		20
Zinc	42.0		7.14	mg/kg wet	35.714	16.3	72.0*	75-125		20
Reference (L109104-SRM1)				Prepared: 09/08/2011 Analyzed: 09/11/2011						
Antimony	48.8		1.27	mg/kg wet	53.000		92.2	0-235.8		
Arsenic	115		2.11	mg/kg wet	114.00		101	82.8-117.54		
Barium	321		1.06	mg/kg wet	307.00		105	79.8-120.2		
Beryllium	109		0.423	mg/kg wet	108.00		101	82.8-117.6		
Boron	78.0		4.23	mg/kg wet	85.100		91.7	67.5-132.8		
Cadmium	233		0.423	mg/kg wet	225.00		104	83.6-116.4		
Chromium	85.1		0.423	mg/kg wet	77.200		110	73.3-126.4		
Cobalt	168		4.23	mg/kg wet	166.00		101	80.7-118.7		
Copper	266		2.11	mg/kg wet	271.00		98.3	80.8-119.2		
Lead	187		1.06	mg/kg wet	190.00		98.5	81.6-118.4		
Manganese	1080		10.6	mg/kg wet	965.00		112	69.3-130.5		
Molybdenum	243		4.23	mg/kg wet	235.00		103	76.2-123.8		

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-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/15/2011 11:24

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 L109104 - SW 3050B										
Reference (L109104-SRM1)				Prepared: 09/08/2011 Analyzed: 09/11/2011						
Nickel	223		8.45	mg/kg wet	221.00		101	79.6-120.8		
Selenium	190		0.634	mg/kg wet	187.00		102	75.9-124.6		
Silver	81.7		0.423	mg/kg wet	83.500		97.9	82.7-117.1		
Thallium	84.1		1.06	mg/kg wet	86.800		96.8	77.3-122.1		
Vanadium	105		5.28	mg/kg wet	98.700		107	75.9-123.6		
Zinc	201		21.1	mg/kg wet	199.00		101	78.4-121.6		
Batch L109137 - SW 7471A Prep										
Blank (L109137-BLK1)				Prepared: 09/12/2011 Analyzed: 09/14/2011						
Mercury	0.0290	U	0.0290	mg/kg wet						
Duplicate (L109137-DUP1)		Source: 1109013-01		Prepared: 09/12/2011 Analyzed: 09/14/2011						
Mercury	0.0190	B	0.0265	mg/kg wet		0.0153			21.3*	20
Matrix Spike (L109137-MS1)		Source: 1109013-01		Prepared: 09/12/2011 Analyzed: 09/14/2011						
Mercury	0.207		0.0265	mg/kg wet	0.14706	0.0153	131*	75-125		
Reference (L109137-SRM1)				Prepared: 09/12/2011 Analyzed: 09/14/2011						
Mercury	1.30		0.0290	mg/kg wet	1.2900		101	62.6-138		

Lionville Laboratory

Logbook #: 996

SAMPLE DIGESTION RECORD

Digestion Batch #: L109104
Date/Time Initiated: 9/8/11 1335
Date/Time Completed: 9/8/11 1920
Analyst: JJS
Matrix (circle): Soil Water Other
Method (circle one): 3005A 3010A 3050 200.7 (1994)
pH/Turbidity: N/A for Solids.

Digested / Undigested (circle one)
Balance #: B14
Balance Cal Verification: ✓ NA
Temp: 97
BLOCK 1 2 (circle one)

NOTE: All temperatures are recorded as corrected temperatures

Work Order #	Spike Vol (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/Sol/TC	Texture	Color / Appearance	Artifact	Turb
1109013-01		0.57	50		TO	Fine	Black	Rocks	N/A
L109104-Dup		0.57	50						
msl	0.5	0.70	50						
1109013-02		0.61	50			Fine	Black	Rocks	
03		0.55	50			Fine	Black	Rocks	
04		0.53	50			Fine	Black	Rocks	
05		0.59	50			Fine	Black	Rocks	
06		0.63	50			Fine	Black	Rocks	
07		0.58	50			Fine	gray	Rocks	
08		0.58	50			Fine	Black	Rocks	
09		0.63	50			Fine	Black	Rocks	
10		0.54	50			Fine	Black	Rocks	
11		0.58	50			Fine	Black	Rocks	
12		0.52	50			Fine	Black	Rocks	
13		0.72	50			Coarse	Ottawa Sand		
14		0.58	50			Fine	Black	Rocks	
15		0.55	50			Fine	Brown	Rocks	
16		0.53	50			Fine	Black	Rocks	
L109104-BLK1		0.61	50			Coarse	Boiling chips		
Skml		0.71	50			Fine	dusty pink sand		

JJS
9/8/11

Spiking IDs / Expiration Date:
MS#: 1101069

LCS#: 1100107

Reagent IDs:
HNO_3 H14036
HCl H20037
H_2O_2 H03411
1:1 HNO_3 637-050-04
1:1 HCl

File ID#:

Data Review By/Date: 9/9/11

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

*: 6077-09-46 2-Sal

Page #:

Lionville Laboratory

MERCURY PREPARATION

Logbook # 992

Analyst: [illegible]
Date 9/11/11 – 9/12/11
Start Time/Temp: 1355/94°
End Time/Temp: 1430/97°

Instrument ID: HG3.2
Balance # B29 /NA
Pipette Calibration (Daily) ✓

Prep Batch: L109137
Worksheet: HG091402
SOP No. ME-HgCVAA
BLOCK 1 (3) 2 (circle one)

NOTE: All temperatures are recorded as corrected temperatures.

LvL Work Order#	pH < 2 (Liq)	Spike Vol (mL)	Spike Conc. (µg/L)	Initial Wt. or Vol (g or mL)	Final Sample Vol (mL)	Comments, % Solids, etc.
Blank				10ml	50	
0.2 µg/L		0.100		10ml	50	
1.0 µg/L		0.500		10ml	50	
2.0 µg/L		1.000		10ml	50	
5.0 µg/L		2.500		10ml	50	
10.0 µg/L		5.000		10ml	50	
IEV		0.125	2.5	10ml	50	
CCV		0.250	5.0	10ml	50	
IEB/CCB				10ml	50	
L109137-BLK1				0.31	50	
SRM1		(illegible)	(illegible)	0.31	50	
1109013-01				0.31	50	
L109137-DUP1				0.34	50	
MS1		0.500	1.0	0.34	50	
1109013-02				0.32	50	
03				0.33	50	
04				0.36	50	
05				0.34	50	
06				0.35	50	
07				0.37	50	
08				0.32	50	
09				0.35	50	
10				0.36	50	
11				0.34	50	
12				0.32	50	
13				0.38	50	
14				0.33	50	

Standard:	ID	Prep Date/Time
ICAL/MS	RI 110017850	9/12/11 1140
ICV/CCV/LCS	I.V. 110125bA	↓

Reviewed By/Date: [illegible] 9/15/11

see book # 9368 for std traceability information

Soil LCS True Value = 1.26 mg/Kg
Standard # 110D103 (illegible)

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

Lionville Laboratory

MERCURY PREPARATION

Logbook # 992

Analyst: [illegible]
Date 9/11/11 – 9/12/11
Start Time/Temp: see page 135
End Time/Temp: see page 135

Instrument ID: HG3.2
Balance # B29 /NA
Pipette Calibration (Daily) (Y) ____

Prep Batch: 409137
Worksheet: HG091402
SOP No. ME-HgCVAA
BLOCK 1 2 (3) (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.
1109013-15				0.39	50	
16				0.32	50	

[illegible] 9/12/11

Standard:	ID	Prep Date/Time
ICAL/MS	see page 139	
ICV/CCV/LCS		

Reviewed By/Date: [illegible] 9/15/11

see book # 9368 for std traceability information

Soil LCS True Value = see page 139 mg/Kg
Standard # ____

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

Lionville Laboratory Use Only: 1109013

Custody Transfer Record/Lab Work Request

Page 1 of 2

Lionville Laboratory
A Division of Eberline Analytical Corporation

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC Hanford SAF# RC-214
Est. Final Proj. Sampling Date:
Project#:
Project Contact/Phone#:
Lionville Laboratory Project Manager: O. Johnson
QC: SW Del: STD TAT: 15 days
Date Rec'd: 9-1-11 Date Due: 9-16-11

		A					B				CD				
Refrigerator #		1					1				1				
#/Type Container	Liquid														
	Solid	1AG					1AG				2P				
Volume	Liquid														
	Solid	250					250				1000				
Preservatives		–					–				–				
ANALYSES REQUESTED →		ORGANIC: PAHs					INORG: Metal Hg CN				Spec EXT.				
		VOA	BNA	Pest/PCB	Herb										
Lionville Laboratory Use Only		8270 8310				41111	Met①								

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													
01	JHJ63			S	8-27-11	0940							X						
02	64					0915					X		X			X			
03	65					1112							X						
04	66					1105							X						
05	67				8-24-11	1110					X		X			X			
06	72					0955					X		X			X			
07	73				8-28-11	0929							X						
08	76					0932							X						
09	74				8-27-11	1050							X						
10	75					1055							X						

Special Instructions: Run matrix QC

met① = Pb + B, Mn, Mo, U

Special Instructions:
* 1. Matrix = ASH, special extraction on hold per client
2.
3.
4.
5.
6.

See SRC

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9-1-11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL			
REWRITTEN			

000000027

Lionville Laboratory Use Only

1109 013

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Lionville Laboratory
A Division of Eberline Analytical Corporation

Client: WC Hanford SAF# BC-214

Est. Final Proj. Sampling Date:

Project#:

Project Contact/Phone#: RJ

Lionville Laboratory Project Manager: O. J.

QC: Del: TAT:

Date Rec'd: 9-1-11 Date Due:

Refrigerator #					A			B			CD				
					1			1			1				
#/Type Container	Liquid														
	Solid				1AC			1AC			2P				
Volume	Liquid														
	Solid				250			250			100C				
Preservatives					—			—			—				
ANALYSES REQUESTED	ORGANIC: VOA	BNA	Pest/PCB	Herb	PAHs			INORG: Metal	CN		SPEC EXT				

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only: 8270	8270 SIM		Metals						
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	11	JIHJ77			S	8/24/11	0950	X			X						
	12	78				8-22-11	0940				X						
	13	79				8-24-11	1044	X			X						
	14	80					0955	X			X			X			
	15	81					1115	X			X			X			
	16	82				8-22-11	0920	X			X			X			

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	9/1/11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-40	Page 1 of 1
Collector: Sparks	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE	SAF No.: RC-214	
Ice Chest No.: GWS-172	Field Logbook No.: EL-1658 COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: 7951 3915 4737 ~~See OSPC~~ DW 8/31/11	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							
Sample No. / Matrix * / Sample Date / Sample Time											
16 J1HJ63 / OTHER / 8-27-11 / 0940	X										
17 J1HJ64 / OTHER / 8-27-11 / 0915	X	X	X								
18 J1HJ65 / OTHER / 8-27-11 / 1112	X										
19 J1HJ66 / OTHER / 8-27-11 / 1105	X										
20 J1HJ67 / OTHER /											

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Sparks	8-27-11 1500	SSU#1	8-27-11 1500
Relinquished By/Removed From: SSU-1	AUG 31 2011 1000	Received By/Stored In: L.D. Wall	AUG 31 2011 1000
Relinquished By/Removed From: L.D. Wall	AUG 31 2011 1400	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FedEx	9-1-11 1000	Received By/Stored In: Victor Hernandez	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY [illegible] DATE 82711

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

000000029

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-40	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE	SAF No.: RC-214	
Ice Chest No.: GWS-16	Field Logbook No.: EL-1658 COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: ~~See OSPC~~ 7951 3915 4601	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None								
Type of Container	G/P	aG	P	G/P								
No. of Container(s)	1	1	2	1								
Volume	250mL	250mL	1000mL	10mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium								

	Sample No.	Matrix *	Sample Date	Sample Time										
16	J1HJ63	OTHER												
17	J1HJ64	OTHER												
18	J1HJ65	OTHER												
19	J1HJ66	OTHER												
20	J1HJ67	OTHER	8/24/11	1110	✓	✓	✓							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: C. Fulton	8/24/11 1200	SSU#1	8/24/11 1200
Relinquished By/Removed From: SSU-1	AUG 31 2011 0800	Received By/Stored In: L.D. Wall	AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wall OHPRC	AUG 31 2011 1400	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FedEx	9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY [illegible] DATE 8 24 11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

000000030

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-41	Page 1 of 1

Collector: C. FULTON	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE		SAF No.: RC-214
Ice Chest No.: GWS-172	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / KIONVILLE	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: 7951 3915 4737

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

SAMPLE ANALYSIS

			Preservation	None	Cool 4C	None	None						
			Type of Container	G/P	aG	P	G/P						
			No. of Container(s)	1	1	2	1						
			Volume	250mL	250mL	1000mL	10mL						
				See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium						
	Sample No.	Matrix *	Sample Date	Sample Time									
21	J1HJ68	OTHER											
22	J1HJ69	OTHER											
23	J1HJ70	OTHER											
24	J1HJ71	OTHER											
25	J1HJ72	OTHER	8/24/11	0955	✓	✓	✓						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: C. Fulton	Date/Time: 8/24/11 1200	Received By/Stored In: SSU #1	Date/Time: 8/24/11 1200
Relinquished By/Removed From: SSU-1	Date/Time: 1000 AUG 31 2011	Received By/Stored In: L.D. Wall CHPRC	Date/Time: AUG 31 2011 1000
Relinquished By/Removed From: L.D. Wall CHPRC	Date/Time: 1400 AUG 31 2011	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FedEx	Date/Time: 9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 9-1-11 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

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY DATE 8 24 11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=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

000000031

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-42	Page 1 of 1
Collector: Sparks	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C; Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE	SAF No.: RC-214	
Ice Chest No.: GWS-216	Field Logbook No.: EL-1658; COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: 7951 3915 4689 ~~See OSPC~~ LW.8/31/11	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

	Sample No.	Matrix *	Sample Date	Sample Time									
26	J1HJ73	OTHER	8-28-11	0929	X								
27	J1HJ74	OTHER											
28	J1HJ75	OTHER											
29	J1HJ76	OTHER	8-28-11	0932	X								

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: Sparks; Date/Time: 8-28-11	Received By/Stored In: SSutt; Date/Time: 8-28-11	
Relinquished By/Removed From: SSU-1; Date/Time: AUG 31 2011 0800	Received By/Stored In: L.D. Wall CHPRC; Date/Time: AUG 31 2011 0800	
Relinquished By/Removed From: L.D. Wall CHPRC; Date/Time: AUG 31 2011 1400	Received By/Stored In: FEDEX; Date/Time:	
Relinquished By/Removed From: 9-1-11; Date/Time: 1000	Received By/Stored In: VICTOR HERNANDEZ; Date/Time: 9-1-11 1000	
Relinquished By/Removed From:	Received By/Stored In:	
Relinquished By/Removed From:	Received By/Stored In:	

SPECIAL INSTRUCTIONS

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY AJD DATE 8/28/11

Matrix *: S=Soil; SE=Sediment; SO=Solid; SI=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

0000000032

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-42	Page 1 of 1

Collector: Sparks	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 SURFACE		SAF No.: RC-214
Ice Chest No.: GWS-216	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: 7951 3915 4689 See OSPC

000000033

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None	08/31/11						
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

	Sample No.	Matrix *	Sample Date	Sample Time									
26	J1HJ73	OTHER											
27	J1HJ74	OTHER	8-27-11	1050	X								
28	J1HJ75	OTHER	8-27-11	1055	X								
29	J1HJ76	OTHER											

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Sparks	Date/Time: 1500 8-27-11	Received By/Stored In: [illegible]	Date/Time: 1500 8-27-11
Relinquished By/Removed From: SSU-1	Date/Time: AUG 31 2011 0800	Received By/Stored In: L.D. Wells CHPSC	Date/Time: AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wells CHPSC	Date/Time: AUG 31 2011 1400	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FedEx	Date/Time: 9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 9-1-11 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

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY [illegible] DATE 82711

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-43	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DUPLICATE		SAF No.: RC-214
Ice Chest No.: GWS-216	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: ~~See USPC~~ 7951 3915 4689 LW 8/31/11

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

Sample No.	Matrix *	Sample Date	Sample Time										
J1HJ77	OTHER	8/24/11	0950	✓	✓								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
C. Fulton	8/24/11 1200	SSU #1	8/24/11 1200
SSU-1	AUG 31 2011 0800	L.D. Wall CHPRC	AUG 31 2011 0800
L.D. Wall CHPRC	AUG 31 2011 1400	FEDEX	
FedEx	9-1-11 1000	VICTOR HERNANDEZ	9-1-11 1000

SPECIAL INSTRUCTIONS

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) (Mercury)

REVIEWED BY
DATE 8/24/11

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=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

11

000000034

1

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-44	Page 1 of 1
Collector: Sparks	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C; Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DUPLICATE	SAF No.: RC-214	
Ice Chest No.: GWS-216	Field Logbook No.: EL-1658; COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: 7951 3915 4689 See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	2	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							
Sample No. / Matrix * / Sample Date / Sample Time											
J1HJ78 / OTHER / 8-27-11 / 0940	X										

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: Sparks; Date/Time: 8-27-11 1500	Received By/Stored In: Sutt; Date/Time: 8-27-11 1500	
Relinquished By/Removed From: SSU-1; Date/Time: AUG 31 2011 0800	Received By/Stored In: L.D. Well; Date/Time: AUG 31 2011 0800	
Relinquished By/Removed From: L.D. Well; Date/Time: AUG 31 2011 1400	Received By/Stored In: FEDEX; Date/Time:	
Relinquished By/Removed From: FEDEX; Date/Time: 9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ; Date/Time: 9-1-11 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

Hold Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY DATE 8 27 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

000000035

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-45	Page 1 of 1
Collector C. Fulton	Company Contact JOAN KESSNER / Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9C / Data Turnaround 15 Days
Project Designation Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location 126-H-1 EQUIPMENT BLANK	SAF No. RC-214	
Ice Chest No. GWS-216	Field Logbook No. EL-1658 / COA BESCAS6000	Method of Shipment FedEx	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. 3055	Bill of Lading/Air Bill No. 7951 3915 4689 ~~See OSPC~~ DW. 8/31/11	

000000036

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

N/A

Preservation	None	Cool 4C									
Type of Container	G/P	aG									
No. of Container(s)	1	1									
Volume	250mL	250mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270									

Sample No.	Matrix *	Sample Date	Sample Time										
J1HJ79	OTHER	8/24/11	1044	X	X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From C. Fulton	8/24/11 1100	Received By/Stored In SSU#1	8/24/11 1100
Relinquished By/Removed From SSU-1	AUG 31 2011 0800	Received By/Stored In CHPRC	AUG 31 2011 0800
Relinquished By/Removed From CHPRC	AUG 31 2011 1400	Received By/Stored In FEDEX	
Relinquished By/Removed From FEDEX	9-1-11 1000	Received By/Stored In VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY SPS DATE 8/24/11

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-46	Page 1 of 1

Collector C. FULTON	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9C	Data Turnaround 15 Days		
Project Designation Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location 126-H-1 DEPTH		SAF No. RC-214
Ice Chest No. GWS-16	Field Logbook No. EL-1658	COA BESCAS6000	Method of Shipment FedEx
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. 3055		Bill of Lading/Air Bill No. ~~See OSPC~~ 7951 3915 4601

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation			None	Cool 4C	None	None						
Type of Container			G/P	aG	P	G/P						
No. of Container(s)			1	1	4	1						
Volume			250mL	250mL	1000mL	10mL						
SAMPLE ANALYSIS			See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium						
Sample No.	Matrix *	Sample Date	Sample Time									
J1HJ80	OTHER	8/24/11	0955	✓	✓	✓						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From C. FULTON	8/24/11 1200	Received By/Stored In SSU#1	8/24/11 1200
Relinquished By/Removed From SSU-1	AUG 3 1 2011 0800	Received By/Stored In L.D. Wall CHPRC	AUG 3 1 2011 0800
Relinquished By/Removed From L.D. Wall CHPRC	AUG 3 1 2011 1400	Received By/Stored In FEDEX	
Relinquished By/Removed From FedEx	9-1-11 1000	Received By/Stored In VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY

DATE 8/24/11

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

000000037

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-47	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH		SAF No.: RC-214
Ice Chest No.: GWS-16	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: ~~See OSPC~~ 7951 3915 4601

000000038

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	4	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Chromium							

Sample No.	Matrix *	Sample Date	Sample Time										
J1HJ81	OTHER	8/24/11	~~1110~~ 1115	✓	✓	✓							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: C Fulton	8/24/11 1200	SSU #1	8/24/11 1200
Relinquished By/Removed From: SSU-1	AUG 31 2011 0800	Received By/Stored In: L.D. Wall	AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wall	AUG 31 2011 1400	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FEDEX	9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY DS DATE 9/2/11

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-48	Page 1 of 1
Collector: Sparks	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH Sample point 17	SAF No.: RC-214	
Ice Chest No.: GWS-172	Field Logbook No.: EL-1658 COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: 7951 3915 4737 ~~See OSPC~~ DW 8/31/11	

POSSIBLE SAMPLE ~~HAZARDS~~/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	4	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							

Sample No.	Matrix *	Sample Date	Sample Time										
J1HJ82	OTHER	8-22-11	0920	X	X	X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Sparks	8-22-11 1500	Received By/Stored In: SSU-1	8-22-11 1500
Relinquished By/Removed From: SSU-1	AUG 31 2011 1000	Received By/Stored In: L.D. Wall CHPRC L.D. Wall	AUG 31 2011 1000
Relinquished By/Removed From: L.D. Wall CHPRC L.D. Wall	AUG 31 2011 1400	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FedEx	9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

REVIEWED BY
DATE 5-27-11

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

000000039

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford
Project/SAF/SOW/Release #: RC-214

Date: 9/1/11

LvL Batch #: 1109013

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7951 3915 4737 4689 4601
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☐ Yes	☑ No	☐ No Seals Cooler GWS 172 Seal not in TACK BAGS SEALED.
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 3.4 3.6 2.3	°C	Cooler # GWS-172 216 16
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 O.T.		Date 9-1-11	

000000040

SR-002-B.doc

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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

RECEIVED
SEP 2011

21 September 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 #	1109016
SDG #	K3632 SPEC EXT
SAF #	RC-214
Date Received	09/001/11
# Samples	3
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
PAHs	
Herbicides	
Metals	X
Inorganics	

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

Sincerely,

Lionville Laboratory
A Division of Eberline Analytical Corporation

Orlette S. Johnson
Project Manager

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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

RECEIVED
SEP 2011

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/16/2011 11:56

Analytical Report for Metals by SW846 6000/7000 series

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1HJ80-1	1109016-01	Other Solid	08/24/2011 09:55	09/01/2011 10:00
J1HJ80-2	1109016-02	Other Solid	08/24/2011 09:55	09/01/2011 10:00
J1HJ80-3	1109016-03	Other Solid	08/24/2011 09:55	09/01/2011 10:00
J1HJ80-4	1109016-04	Other Solid	08/24/2011 09:55	09/01/2011 10:00
J1HJ81-1	1109016-05	Other Solid	08/24/2011 11:15	09/01/2011 10:00
J1HJ81-2	1109016-06	Other Solid	08/24/2011 11:15	09/01/2011 10:00
J1HJ81-3	1109016-07	Other Solid	08/24/2011 11:15	09/01/2011 10:00
J1HJ81-4	1109016-08	Other Solid	08/24/2011 11:15	09/01/2011 10:00
J1HJ82-1	1109016-09	Other Solid	08/27/2011 09:20	09/01/2011 10:00
J1HJ82-2	1109016-10	Other Solid	08/27/2011 09:20	09/01/2011 10:00
J1HJ82-3	1109016-11	Other Solid	08/27/2011 09:20	09/01/2011 10:00
J1HJ82-4	1109016-12	Other Solid	08/27/2011 09:20	09/01/2011 10:00
J1HJ80-A1	1109016-13	Leachate	08/24/2011 09:55	09/01/2011 10:00
J1HJ80-B1	1109016-14	Leachate	08/24/2011 09:55	09/01/2011 10:00
J1HJ80-B2	1109016-15	Leachate	08/24/2011 09:55	09/01/2011 10:00
J1HJ80-C1	1109016-16	Leachate	08/24/2011 09:55	09/01/2011 10:00
J1HJ81-A1	1109016-17	Leachate	08/24/2011 11:15	09/01/2011 10:00
J1HJ81-B1	1109016-18	Leachate	08/24/2011 11:15	09/01/2011 10:00
J1HJ81-C1	1109016-19	Leachate	08/24/2011 11:15	09/01/2011 10:00
J1HJ81-C2	1109016-20	Leachate	08/24/2011 11:15	09/01/2011 10:00
J1HJ82-A1	1109016-21	Leachate	08/27/2011 09:20	09/01/2011 10:00
J1HJ82-A2	1109016-22	Leachate	08/27/2011 09:20	09/01/2011 10:00
J1HJ82-B1	1109016-23	Leachate	08/27/2011 09:20	09/01/2011 10:00
J1HJ82-C1	1109016-24	Leachate	08/27/2011 09:20	09/01/2011 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-214
LVL#: 1109016
SDG/SAF#: K3632/RC-214

W.O.#: 60049-001-001-0001-00
Date Received: 09-01-11

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 12 other solid samples and 12 TCLP leachate samples.

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

   The TCLP leachate samples J1HJ80-A1, J1HJ81-A1, J1HJ82-A1, and J1HJ82-A2 were prepared with 5-fold dilutions for ICP metals due to sample matrix. The remaining TCLP leachate samples were analyzed and reported with 5-fold dilutions for ICP metals due to sample matrix.

   The TCLP leachate samples J1HJ80-A1 and J1HJ81-A2 were prepared with 2-fold dilutions and TCLP leachate samples J1HJ81-A1 and J1HJ81-A1 were prepared with 3-fold dilutions for Mercury due to insufficient sample volume.

   The solid sample J1HJ81-1 was reanalyzed and reported with a 3-fold dilution for Mercury due to high concentration of Mercury in the 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).

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

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 50 pages.

7. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation, MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}.

8. All ICP Interference Check Standards were within control limits.

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

10. The matrix spike (MS) recoveries for 5 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
J1HJ80-1	Antimony	100	103.3
	Barium	1,100	105.4
	Copper	100	115.8
	Manganese	100	82.0
	Thallium	100	86.0

12. The TCLP extract from sample J1HJ80-B2 was selected for the matrix spike (MS) for this analytical batch. All MS recoveries were greater than 50% as per method criteria.

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

9/28/11
Date

alm/09-016tchgn%

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

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

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	09/16/2011 11:56

J1HJ80-1
1109016-01 (Other Solid)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Antimony	0.484	U	0.484	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**2.22**		0.806	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**943**		0.403	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**1.49**		0.161	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**392**		1.61	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.172**		0.161	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**10.7**		0.161	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**2.26**		1.61	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**28.2**		0.806	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**11.9**		0.403	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**95.1**		4.03	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**1.35**	B	1.61	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**6.25**		3.23	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	0.242	U	0.242	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.161	U	0.161	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.403	U	0.403	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	16.1	U	16.1	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**30.3**		2.02	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**38.2**		8.06	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.0331**		0.0290	mg/kg wet	1	L109179	09/13/2011	09/14/2011	7471A

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J1HJ80-2
1109016-02 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.441	U	0.441	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**2.42**		0.735	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**964**		0.368	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**1.39**		0.147	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**347**		1.47	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.167**		0.147	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**12.1**		0.147	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**2.52**		1.47	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**80.9**		0.735	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**16.7**		0.368	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**95.0**		3.68	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**1.48**		1.47	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**7.28**		2.94	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	0.221	U	0.221	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.147	U	0.147	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.368	U	0.368	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	14.7	U	14.7	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**30.3**		1.84	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**25.8**		7.35	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.101**		0.0290	mg/kg wet	1	L109179	09/13/2011	09/14/2011	7471A

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

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Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ80-3
1109016-03 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.588	U	0.588	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	2.27		0.980	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	1130		0.490	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	1.30		0.196	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	377		1.96	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	0.152	B	0.196	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	10.4		0.196	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	2.48		1.96	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	27.2		0.980	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	7.79		0.490	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	94.3		4.90	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	1.34	B	1.96	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	6.66		3.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	0.383		0.294	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.196	U	0.196	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.490	U	0.490	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	19.6	U	19.6	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	29.6		2.45	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	21.6		9.80	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	0.0309		0.0257	mg/kg wet	1	L109179	09/13/2011	09/14/2011	7471A

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Exton, PA 19341
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Fax: 610-280-3041

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Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ80-4
1109016-04 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Antimony	0.577	U	0.577	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**2.41**		0.962	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**941**		0.481	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**1.20**		0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**370**		1.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.142**	B	0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**10.8**		0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**2.22**		1.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**22.4**		0.962	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**17.1**		0.481	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**103**		4.81	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**1.25**	B	1.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**6.53**		3.85	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	**0.385**		0.288	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.192	U	0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.481	U	0.481	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	19.2	U	19.2	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**29.5**		2.40	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**24.7**		9.62	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.0300**		0.0273	mg/kg wet	1	L109179	09/13/2011	09/15/2011	7471A

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

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Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ81-1
1109016-05 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.455	U	0.455	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**1.70**		0.758	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**468**		0.379	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**0.525**		0.152	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**146**		1.52	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.156**		0.152	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**16.1**		0.152	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**3.08**		1.52	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**22.8**		0.758	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**170**		0.379	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**110**		3.79	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**0.977**	B	1.52	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**8.28**		3.03	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	**0.248**		0.227	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.152	U	0.152	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.379	U	0.379	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	15.2	U	15.2	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**28.5**		1.89	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**55.5**		7.58	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**1.65**		0.0818	mg/kg wet	3	L109179	09/13/2011	09/15/2011	7471A

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

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J1HJ81-2
1109016-06 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Antimony	0.500	U	0.500	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**3.41**		0.833	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**844**		0.417	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**0.978**		0.167	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**223**		1.67	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.147**	B	0.167	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**12.4**		0.167	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**5.31**		1.67	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**36.1**		0.833	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**23.0**		0.417	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**232**		4.17	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**2.04**		1.67	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**12.8**		3.33	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	**0.252**		0.250	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.167	U	0.167	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.417	U	0.417	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	16.7	U	16.7	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**42.4**		2.08	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**31.8**		8.33	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.802**		0.0281	mg/kg wet	1	L109179	09/13/2011	09/15/2011	7471A

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Fax: 610-280-3041

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2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ81-3
1109016-07 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Antimony	**0.515**	B	0.600	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**3.20**		1.00	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**871**		0.500	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**0.896**		0.200	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**276**		2.00	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.180**	B	0.200	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**13.7**		0.200	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**4.48**		2.00	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**31.7**		1.00	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**40.0**		0.500	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**144**		5.00	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**1.59**	B	2.00	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**9.36**		4.00	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	**0.340**		0.300	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.200	U	0.200	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.500	U	0.500	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	20.0	U	20.0	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**45.6**		2.50	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**32.0**		10.0	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.829**		0.0250	mg/kg wet	1	L109179	09/13/2011	09/15/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ81-4
1109016-08 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.508	U	0.508	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**2.31**		0.847	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**907**		0.424	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**0.871**		0.169	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**265**		1.69	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.181**		0.169	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**10.8**		0.169	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**4.14**		1.69	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**29.0**		0.847	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**19.6**		0.424	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**275**		4.24	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**1.54**	B	1.69	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**9.52**		3.39	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	**0.318**		0.254	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.169	U	0.169	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.424	U	0.424	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	16.9	U	16.9	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**35.7**		2.12	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**34.1**		8.47	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.898**		0.0290	mg/kg wet	1	L109179	09/13/2011	09/15/2011	7471A

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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ82-1
1109016-09 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.588	U	0.588	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**2.74**		0.980	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**559**		0.490	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**1.20**		0.196	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**263**		1.96	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.195**	B	0.196	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**8.38**		0.196	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**1.61**	B	1.96	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**18.6**		0.980	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**25.3**		0.490	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**73.0**		4.90	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**0.879**	B	1.96	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**4.80**		3.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	**0.841**		0.294	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.196	U	0.196	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.490	U	0.490	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	19.6	U	19.6	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**21.4**		2.45	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**42.4**		9.80	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.0633**		0.0273	mg/kg wet	1	L109179	09/13/2011	09/15/2011	7471A

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Phone: 610-280-3000
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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/16/2011 11:56

J1HJ82-2
1109016-10 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.577	U	0.577	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**2.53**		0.962	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**485**		0.481	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**1.07**		0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**223**		1.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.168**	B	0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**7.52**		0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**1.47**	B	1.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**16.9**		0.962	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**22.2**		0.481	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**63.9**		4.81	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**0.769**	B	1.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**4.29**		3.85	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	**0.800**		0.288	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.192	U	0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.481	U	0.481	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	19.2	U	19.2	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**19.2**		2.40	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**26.7**		9.62	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.0697**		0.0257	mg/kg wet	1	L109179	09/13/2011	09/15/2011	7471A

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Exton, PA 19341
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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ82-3
1109016-11 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Antimony	0.484	U	0.484	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**2.78**		0.806	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**603**		0.403	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**1.24**		0.161	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**263**		1.61	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.212**		0.161	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**8.45**		0.161	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**1.72**		1.61	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**19.7**		0.806	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**27.0**		0.403	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**70.8**		4.03	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**0.830**	B	1.61	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**4.81**		3.23	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	**0.877**		0.242	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.161	U	0.161	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.403	U	0.403	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	16.1	U	16.1	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**22.0**		2.02	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**28.0**		8.06	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.0650**		0.0290	mg/kg wet	1	L109179	09/13/2011	09/15/2011	7471A

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ82-4
1109016-12 (Other Solid)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Antimony	0.577	U	0.577	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Arsenic	**2.83**		0.962	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Barium	**563**		0.481	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Beryllium	**1.24**		0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Boron	**262**		1.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cadmium	**0.209**		0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Chromium	**8.57**		0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Cobalt	**1.87**	B	1.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Copper	**20.7**		0.962	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Lead	**25.4**		0.481	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Manganese	**71.7**		4.81	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Molybdenum	**0.920**	B	1.92	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Nickel	**5.38**		3.85	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Selenium	**1.02**		0.288	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Silver	0.192	U	0.192	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Thallium	0.481	U	0.481	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Uranium	19.2	U	19.2	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Vanadium	**22.9**		2.40	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Zinc	**28.5**		9.62	mg/kg wet	1	L109118	09/08/2011	09/11/2011	6010B
Mercury	**0.0507**		0.0250	mg/kg wet	1	L109179	09/13/2011	09/15/2011	7471A

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ80-A1
1109016-13 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0758**		0.00500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Chromium	**0.00510**	B	0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Boron	**13.4**		0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.0172**		0.0150	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0462**		0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000186**	B	0.000400	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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Phone: 610-280-3000
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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ80-B1
1109016-14 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0746**		0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Chromium	**0.00286**	B	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Boron	**7.18**		0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.00750**	B	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0343**		0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000103**	B	0.000200	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ80-B2
1109016-15 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0774**		0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Chromium	**0.00328**	B	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Lead	**0.0109**	B	0.0500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Boron	**6.79**		0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.00880**	B	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Nickel	**0.00310**	B	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0321**		0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000111**	B	0.000200	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ80-C1
1109016-16 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0768**		0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Chromium	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Boron	**4.04**		0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.00728**	B	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0270**		0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000100**	B	0.000200	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/16/2011 11:56

J1HJ81-A1
1109016-17 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0664**		0.00500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Chromium	**0.00762**	B	0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Boron	**4.95**		0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.0102**	B	0.0150	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0320**		0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000339**	B	0.000600	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ81-B1
1109016-18 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0688**		0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Chromium	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Boron	**2.82**		0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.00324**	B	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0277**		0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000115**	B	0.000200	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ81-C1
1109016-19 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0808**		0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Chromium	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Boron	**1.75**		0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Molybdenum	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0207**	B	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000117**	B	0.000200	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/16/2011 11:56

J1HJ81-C2
1109016-20 (Leachate)

Lionville Laboratory

TCLP Metals by SW846 1311 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0788**		0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Chromium	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Boron	**1.75**		0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Molybdenum	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0199**	B	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000110**	B	0.000200	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ82-A1
1109016-21 (Leachate)

Lionville Laboratory

TCLP Metals by SW846 1311 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.0750	U	0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0388**		0.00500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Chromium	0.0250	U	0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Selenium	**0.0191**	B	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Boron	**10.2**		0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.0176**		0.0150	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0329**		0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000366**	B	0.000600	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ82-A2
1109016-22 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0409**		0.00500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Chromium	0.0250	U	0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Selenium	**0.0182**	B	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Boron	**11.2**		0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.0187**		0.0150	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0366**		0.0250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	1	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000202**	B	0.000400	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

J1HJ82-B1
1109016-23 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0420**		0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Chromium	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Boron	**6.66**		0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.00812**	B	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0247**	B	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000115**	B	0.000200	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/16/2011 11:56

J1HJ82-C1
1109016-24 (Leachate)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Barium	**0.0388**		0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cadmium	0.0150	U	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Chromium	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Lead	0.0500	U	0.0500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Selenium	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Silver	0.0300	U	0.0300	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Antimony	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Beryllium	0.00500	U	0.00500	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Boron	**4.11**		0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Cobalt	0.0100	U	0.0100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Copper	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Manganese	0.0250	U	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Molybdenum	**0.00497**	B	0.0150	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Nickel	0.100	U	0.100	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Thallium	0.0750	U	0.0750	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Uranium	1.00	U	1.00	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Vanadium	**0.0191**	B	0.0250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Zinc	0.250	U	0.250	mg/L	5	L109107	09/08/2011	09/10/2011	6010
Mercury	**0.000102**	B	0.000200	mg/L	1	L109167	09/12/2011	09/14/2011	7470

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WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/16/2011 11:56

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 L109118 - SW 3050B										
Blank (L109118-BLK1)				Prepared: 09/08/2011 Analyzed: 09/11/2011						
Antimony	0.385	U	0.385	mg/kg wet						
Arsenic	0.641	U	0.641	mg/kg wet						
Barium	0.321	U	0.321	mg/kg wet						
Beryllium	0.128	U	0.128	mg/kg wet						
Boron	1.28	U	1.28	mg/kg wet						
Cadmium	0.128	U	0.128	mg/kg wet						
Chromium	0.128	U	0.128	mg/kg wet						
Cobalt	1.28	U	1.28	mg/kg wet						
Copper	0.641	U	0.641	mg/kg wet						
Lead	0.321	U	0.321	mg/kg wet						
Manganese	3.21	U	3.21	mg/kg wet						
Molybdenum	1.28	U	1.28	mg/kg wet						
Nickel	2.56	U	2.56	mg/kg wet						
Selenium	0.192	U	0.192	mg/kg wet						
Silver	0.128	U	0.128	mg/kg wet						
Thallium	0.321	U	0.321	mg/kg wet						
Uranium	12.8	U	12.8	mg/kg wet						
Vanadium	1.60	U	1.60	mg/kg wet						
Zinc	1.02	B	6.41	mg/kg wet						
Matrix Spike (L109118-MS1)		Source: 1109016-01		Prepared: 09/08/2011 Analyzed: 09/11/2011						
Antimony	14.5		0.588	mg/kg wet	49.020	0.484 U	29.7*	75-125		20
Arsenic	174		0.980	mg/kg wet	196.08	2.22	87.6	75-125		20
Barium	1260		0.490	mg/kg wet	196.08	943	164*	75-125		20
Beryllium	5.52		0.196	mg/kg wet	4.9020	1.49	82.2	75-125		20
Boron	490		1.96	mg/kg wet	98.039	392	100	75-125		20
Cadmium	4.45		0.196	mg/kg wet	4.9020	0.172	87.3	75-125		20
Chromium	28.2		0.196	mg/kg wet	19.608	10.7	89.1	75-125		20
Cobalt	41.5		1.96	mg/kg wet	49.020	2.26	80.1	75-125		20
Copper	63.5		0.980	mg/kg wet	24.510	28.2	144*	75-125		20
Lead	56.6		0.490	mg/kg wet	49.020	11.9	91.3	75-125		20
Manganese	128		4.90	mg/kg wet	49.020	95.1	68.0*	75-125		20
Molybdenum	83.3		1.96	mg/kg wet	98.039	1.35	83.6	75-125		20
Nickel	45.3		3.92	mg/kg wet	49.020	6.25	79.6	75-125		20
Selenium	162		0.294	mg/kg wet	196.08	0.242 U	82.8	75-125		20
Silver	4.45		0.196	mg/kg wet	4.9020	0.161 U	90.7	75-125		20
Thallium	143		0.490	mg/kg wet	196.08	0.403 U	73.0*	75-125		20

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Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/16/2011 11:56

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 L109118 - SW 3050B									
Matrix Spike (L109118-MS1)		**Source: 1109016-01**	Prepared: 09/08/2011 Analyzed: 09/11/2011						
Uranium	410	19.6	mg/kg wet	490.20	16.1 U	83.7	75-125		20
Vanadium	76.3	2.45	mg/kg wet	49.020	30.3	93.8	75-125		20
Zinc	79.1	9.80	mg/kg wet	49.020	38.2	83.4	75-125		20
Reference (L109118-SRM1)			Prepared: 09/08/2011 Analyzed: 09/11/2011						
Antimony	45.0	1.36	mg/kg wet	53.000		85.0	0-235.8		
Arsenic	117	2.27	mg/kg wet	114.00		103	82.8-117.54		
Barium	300	1.14	mg/kg wet	307.00		97.9	79.8-120.2		
Beryllium	106	0.455	mg/kg wet	108.00		97.7	82.8-117.6		
Boron	77.6	4.55	mg/kg wet	85.100		91.2	67.5-132.8		
Cadmium	221	0.455	mg/kg wet	225.00		98.4	83.6-116.4		
Chromium	82.7	0.455	mg/kg wet	77.200		107	73.3-126.4		
Cobalt	162	4.55	mg/kg wet	166.00		97.3	80.7-118.7		
Copper	264	2.27	mg/kg wet	271.00		97.3	80.8-119.2		
Lead	184	1.14	mg/kg wet	190.00		96.8	81.6-118.4		
Manganese	918	11.4	mg/kg wet	965.00		95.1	69.3-130.5		
Molybdenum	241	4.55	mg/kg wet	235.00		103	76.2-123.8		
Nickel	224	9.09	mg/kg wet	221.00		101	79.6-120.8		
Selenium	188	0.682	mg/kg wet	187.00		100	75.9-124.6		
Silver	82.8	0.455	mg/kg wet	83.500		99.2	82.7-117.1		
Thallium	83.4	1.14	mg/kg wet	86.800		96.1	77.3-122.1		
Vanadium	108	5.68	mg/kg wet	98.700		109	75.9-123.6		
Zinc	199	22.7	mg/kg wet	199.00		99.8	78.4-121.6		
Batch L109179 - SW 7471A Prep									
Blank (L109179-BLK1)			Prepared: 09/13/2011 Analyzed: 09/14/2011						
Mercury	0.0273 U	0.0273	mg/kg wet						

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

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

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 L109179 - SW 7471A Prep									
Matrix Spike (L109179-MS3)		**Source: 1109016-01**		Prepared: 09/13/2011 Analyzed: 09/14/2011					
Mercury	0.212	0.0265	mg/kg wet	0.14706	0.0331	122	75-125		
Reference (L109179-SRM1)				Prepared: 09/13/2011 Analyzed: 09/14/2011					
Mercury	1.28	0.0281	mg/kg wet	1.2900		98.8	62.6-138		

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WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

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 L109107 - SW 3005A										
Blank (L109107-BLK1)				Prepared: 09/08/2011 Analyzed: 09/10/2011						
Arsenic	0.0150	U	0.0150	mg/L						
Barium	0.00100	U	0.00100	mg/L						
Cadmium	0.00300	U	0.00300	mg/L						
Chromium	0.00500	U	0.00500	mg/L						
Lead	0.0100	U	0.0100	mg/L						
Selenium	0.0200	U	0.0200	mg/L						
Silver	0.00600	U	0.00600	mg/L						
Antimony	0.0200	U	0.0200	mg/L						
Beryllium	0.00100	U	0.00100	mg/L						
Boron	0.00828	B	0.0150	mg/L						
Cobalt	0.00200	U	0.00200	mg/L						
Copper	0.0200	U	0.0200	mg/L						
Manganese	0.00500	U	0.00500	mg/L						
Molybdenum	0.00107	B	0.00300	mg/L						
Nickel	0.0200	U	0.0200	mg/L						
Thallium	0.0150	U	0.0150	mg/L						
Uranium	0.200	U	0.200	mg/L						
Vanadium	0.00500	U	0.00500	mg/L						
Zinc	0.0500	U	0.0500	mg/L						
Blank (L109107-BLK2)				Prepared: 09/08/2011 Analyzed: 09/10/2011						
Arsenic	0.0750	U	0.0750	mg/L						
Barium	0.00500	U	0.00500	mg/L						
Cadmium	0.0150	U	0.0150	mg/L						
Chromium	0.0250	U	0.0250	mg/L						
Lead	0.0500	U	0.0500	mg/L						
Selenium	0.100	U	0.100	mg/L						
Silver	0.0300	U	0.0300	mg/L						
Antimony	0.100	U	0.100	mg/L						
Beryllium	0.00500	U	0.00500	mg/L						
Boron	0.0292	B	0.0750	mg/L						
Cobalt	0.0100	U	0.0100	mg/L						
Copper	0.100	U	0.100	mg/L						
Manganese	0.0250	U	0.0250	mg/L						
Molybdenum	0.0150	U	0.0150	mg/L						
Nickel	0.100	U	0.100	mg/L						
Thallium	0.0750	U	0.0750	mg/L						

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-214 Project Number: K3632 Project Manager: Joan Kessner	Reported: 09/16/2011 11:56

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 L109107 - SW 3005A										
Blank (L109107-BLK2)				Prepared: 09/08/2011 Analyzed: 09/10/2011						
Uranium	1.00	U	1.00	mg/L						
Vanadium	0.0250	U	0.0250	mg/L						
Zinc	0.250	U	0.250	mg/L						
LCS (L109107-BS1)				Prepared: 09/08/2011 Analyzed: 09/10/2011						
Arsenic	10.2		0.0150	mg/L	10.000		102	80-120		20
Barium	5.14		0.00100	mg/L	5.0000		103	80-120		20
Cadmium	0.245		0.00300	mg/L	0.25000		97.9	80-120		20
Chromium	0.500		0.00500	mg/L	0.50000		100	80-120		20
Lead	2.51		0.0100	mg/L	2.5000		100	80-120		20
Selenium	10.3		0.0200	mg/L	10.000		103	80-120		20
Silver	0.503		0.00600	mg/L	0.50000		101	80-120		20
Antimony	3.16		0.0200	mg/L	3.0000		105	80-120		20
Beryllium	0.253		0.00100	mg/L	0.25000		101	80-120		20
Boron	5.18		0.0150	mg/L	5.0000		104	80-120		20
Cobalt	2.52		0.00200	mg/L	2.5000		101	80-120		20
Copper	1.27		0.0200	mg/L	1.2500		102	80-120		20
Manganese	0.770		0.00500	mg/L	0.75000		103	80-120		20
Molybdenum	5.14		0.00300	mg/L	5.0000		103	80-120		20
Nickel	2.03		0.0200	mg/L	2.0000		101	80-120		20
Thallium	10.2		0.0150	mg/L	10.000		102	80-120		20
Uranium	4.88		0.200	mg/L	5.0000		97.6	80-120		20
Vanadium	2.56		0.00500	mg/L	2.5000		102	80-120		20
Zinc	1.02		0.0500	mg/L	1.0000		102	80-120		20
Matrix Spike (L109107-MS1)		Source: 1109016-15		Prepared: 09/08/2011 Analyzed: 09/10/2011						
Arsenic	2.00		0.0750	mg/L	2.0000	0.0750 U	99.8	50-1000		20
Barium	2.06		0.00500	mg/L	2.0000	0.0774	99.4	50-1000		20
Cadmium	0.0466		0.0150	mg/L	0.050000	0.0150 U	93.3	50-1000		20
Chromium	0.199		0.0250	mg/L	0.20000	0.00328	97.9	50-1000		20
Lead	0.504		0.0500	mg/L	0.50000	0.0109	98.6	50-1000		20
Selenium	1.97		0.100	mg/L	2.0000	0.100 U	98.3	50-1000		20
Silver	0.0506		0.0300	mg/L	0.050000	0.0300 U	101	50-1000		20
Antimony	0.502		0.100	mg/L	0.50000	0.100 U	100	50-1000		20
Beryllium	0.0485		0.00500	mg/L	0.050000	0.00500 U	97.0	50-1000		20
Boron	8.03		0.0750	mg/L	1.0000	6.79	124	50-1000		20
Cobalt	0.502		0.0100	mg/L	0.50000	0.0100 U	100	50-1000		20
Copper	0.251		0.100	mg/L	0.25000	0.100 U	100	50-1000		20

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Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-214	
2620 Fermi Avenue	Project Number: K3632	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	09/16/2011 11:56

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 L109107 - SW 3005A										
Matrix Spike (L109107-MS1)		Source: 1109016-15		Prepared: 09/08/2011 Analyzed: 09/10/2011						
Manganese	0.487		0.0250	mg/L	0.50000	0.0250 U	97.3	50-1000		20
Molybdenum	0.996		0.0150	mg/L	1.0000	0.00880	98.7	50-1000		20
Nickel	0.500		0.100	mg/L	0.50000	0.00310	99.4	50-1000		20
Thallium	2.03		0.0750	mg/L	2.0000	0.0750 U	101	50-1000		20
Uranium	4.78		1.00	mg/L	5.0000	1.00 U	95.7	50-1000		20
Vanadium	0.548		0.0250	mg/L	0.50000	0.0321	103	50-1000		20
Zinc	0.508		0.250	mg/L	0.50000	0.250 U	102	50-1000		20
Batch L109167 - SW 7470A Prep										
Blank (L109167-BLK1)				Prepared: 09/12/2011 Analyzed: 09/14/2011						
Mercury	0.000128	B	0.000200	mg/L						
Blank (L109167-BLK2)				Prepared: 09/12/2011 Analyzed: 09/14/2011						
Mercury	0.0000840	B	0.000200	mg/L						
LCS (L109167-BS1)				Prepared: 09/12/2011 Analyzed: 09/14/2011						
Mercury	0.00513		0.000200	mg/L	0.0050606		101	80-120		
Matrix Spike (L109167-MS1)		Source: 1109016-15		Prepared: 09/12/2011 Analyzed: 09/14/2011						
Mercury	0.00105		0.000200	mg/L	0.0010061	0.000111	93.3	50-1000		

Lionville Laboratory

Logbook #: 496

SAMPLE DIGESTION RECORD

Digestion Batch #: L109118
Date/Time Initiated: 9/9/11 1725
Date/Time Completed: 9/9/11 1715
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: Y NA
Temp: 96
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
1109016-01		0.62	50		TO	Fine	Black	Rocks	N/A
* L109118-MS1	0.5	0.51	50						
1109016-02		0.68	50						
03		0.51	50						
04		0.52	50						
05		0.66	50			Fine	Black	Rocks	
06		0.60	50						
07		0.50	50						
08		0.59	50						
09		0.51	50			Fine	Black	Rocks	
10		0.52	50						
11		0.62	50						
12		0.52	50						
L109118 BLK1		0.78	50			Coarse	Boiling Chips		
SRM1		0.66	50			Fine	Lost Type and Sand		

JJS
9/9/11

Spiking IDs / Expiration Date:
MS#: 1101054
LCS#: 1100107

Reagent IDs:
HNO_3 1109096
HCl 1109037
H_2O_2 1109041
1:1 HNO_3 037-091-02
1:1 HCl

File ID#:

Data Review By/Date: 9/12/11

*: 6072-091-16 250mL

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Page #:

Lionville Laboratory

Logbook #: 996

SAMPLE DIGESTION RECORD

Digestion Batch #: L109107
Date/Time Initiated: 9/8/11 1310
Date/Time Completed: 9/9/11 0915
Analyst: JJ
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 #: NA
Balance Cal Verification: Y NA
Temp: 94
BLOCK 1 2 3 (circle one)

CIC-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
1109016-13		10	50		TC	N/A	CIC	N/A	N/A
14		50	50				CIC		
15		50	50				CIC		
* L109107-MS1	0.5	50	50						
1109016-16		50	50				CIC		
-17		10	50				CIC		
-18		50	50				CIC		
-19		50	50				CIC		
-20		50	50				CIC		
-21		10	50				CIC		
-22		10	50				CIC		
-23		50	50				CIC		
-24		50	50				CIC		
L109107-MS4		50	50				CIC		
* -MS1	0.5	50	50				CIC		
+ -MS7		50	50				CIC		

JJS
9/9/11

Spiking IDs / Expiration Date:
MS#: 1101069
LCS#: 1101070

Reagent IDs:
HNO_3 K14036
HCl K200033
H_2O_2
1:1 HNO_3
1:1 HCl

File ID#:

Data Review By/Date: 9/9/11

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

*: 6072-091-16-2Soil

Page #: 58

+: Associated with L109081

000000036

Lionville Laboratory

MERCURY PREPARATION

Logbook # 992

Analyst: [illegible] W.E. 9/13/11
Date L109179 9/13/11
Start Time/Temp: 1845/93
End Time/Temp: 1915/94

Instrument ID: HG3.2
Balance # B29 /NA
Pipette Calibration (Daily) (Y)

Prep Batch: L109179
Worksheet: HG091402
SOP No. ME-HgCVAA
BLOCK 1 2 (circle one) (3)

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	curve diluted with
0.2 ug/l		0.100		10 ml	50	L109137 and L109138 on
1.0 ug/l		0.500		10 ml	50	9/12/11
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	
L109179-BLK1				0.33	50	
SRM1				0.32	50	
1108119-01				0.34	50	
L109179-DUP1				0.39	50	
MS1		0.500	1.0	0.34	50	
1108119-02				0.33	50	
03				0.37	50	
1108124-01				0.33	50	
L109179-DUP2				0.37	50	
MS2				0.31	50	
1109016-01				0.31	50	
L109179-MS3				0.34	50	
1109016-02				0.31	50	
03				0.35	50	
04				0.33	50	
05				0.33	50	
06			W.E. 9/13/11	0.382	50	
07				0.36	50	

Standard:	ID	Prep Date/Time
ICAL/MS	RI 1001785B	9/13/11 1315
ICV/CCV/LCS	I.V. ~~1100~~ 1101256A	1

Reviewed By/Date: [illegible] 9/15/11

see book # 9368 for std traceability information

Soil LCS True Value = W.E. 1.24 mg/Kg
Standard # 1100103

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

Lionville Laboratory

MERCURY PREPARATION

Logbook # 992

Analyst: [illegible] / [illegible]
Date 9/13/11
Start Time/Temp: [illegible] 159
End Time/Temp: [illegible]

Instrument ID: HG3.2
Balance # B29 /NA
Pipette Calibration (Daily) (4)

Prep Batch: L109179
Worksheet: HG091402
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) (5)	Final Sample Vol (mL)	Comments, % Solids, etc.
1/090/6-08				0.31	50	
09				0.33	50	
10				0.35	50	
11				0.31	50	
12				0.36	50	

[illegible] 9/13/11

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

Reviewed By/Date: [illegible] 9/15/11

see book # 9368 for std traceability information

Soil LCS True Value = [illegible] page 159 mg/Kg
Standard # _____

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

Lionville Laboratory

MERCURY PREPARATION

Logbook # 992

Analyst: [illegible]
Date 9/12/11
Start Time/Temp: 1900 / 95°
End Time/Temp: 2100 / 95°

Instrument ID: HG3.2 / HG3.1
Balance # (N/A)
Pipette Calibration (Daily) (Y)

Prep Batch: L106167
Worksheet: HG 091302 / HGW91401
SOP No. ME-HgCVAA
BLOCK 1 2 (3) (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				33	33	
0.2 ug/L		0.0667		33	33	
1.0 ug/L		0.333		33	33	
2.0 ug/L		0.667		33	33	
5.0 ug/L		1.667		33	33	
10.0 ug/L		3.333		33	33	
IEN		0.0835	2.5	33	33	
CCV		0.167	5.0	33	33	
ICB/CCB				33	33	
L109167-BLK1				33	33	
BS1		0.167	5.0	33	33	
BLK2	<			33	33	
1109016-13	<			16.5	33	- limited vol.
14	<			33	33	
15	<			33	33	
L109167-MS1	<	0.333	1.0	33	33	
1109016-16	<			33	33	
17	<			11	33	- std vol.
18	<			33	33	
19	<			33	33	
20	<			33	33	
21	<			11	33	std vol.
22	<			16.5	33	
23	<			33	33	
24	<			33	33	
		MW 9/12/11				

Standard:	ID	Prep Date/Time
ICAL/MS	RI 10017853	9/12/11 1140
ICV/CCV/LCS	IV 1101256A	↓

Reviewed By/Date: [illegible] 9/15/11

see book # 9368 for std traceability information

Soil LCS True Value = N/A mg/Kg
Standard #

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

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 1006

Start Date: 9-7-11 Start Time: 13:36 Analyst: RH SOP: SPI-1311.1	End Date: 9-8-11 End Time: 8:00 Analyst: RH Method: B11.1	Tumbler Speed: 30 RPM Leachate Batch #: L109081 Leachate Page: 1 of 4 Room Temp. (°C): Start 21 /Finish 21 Acceptance Criteria: 23°C ± 2°

LvL #: 1109016-13 Client ID#: JIHJ80-A1 pH After 5 Min: 9.43 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 100 pH After Extraction: 8.41	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL #: 1109016-14 Client ID#: JIHJ80-B1 pH After 5 Min: 9.43 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 250 pH After Extraction: 9.05	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL # 1109016-15 Client ID#: JIHJ80-B2 pH After 5 Min: 9.43 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 250 pH After Extraction: 9.12	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL #: 1109016-16 Client ID#: JIHJ80-C1 pH After 5 Min: 9.43 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 500 pH After Extraction: 9.31	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date [signature] 9/12/11

SPI-1311.1-A-0310

Page #

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK# 1006

Start Date: 9-7-11 Start Time: 13:36 Analyst: RH SOP: SPI-1311.1	End Date: 9-8-11 End Time: 8:00 Analyst: RH Method: 1311.1	Tumbler Speed: 30 RPM Leachate Batch #: L1090081 Leachate Page: 2 of 4 Room Temp. (°C): Start 21 /Finish 21 Acceptance Criteria: 23°C ± 2°

LvL #: 1109016-17 Client ID#: JIHJ81-A1 pH After 5 Min: 9.71 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 100 pH After Extraction: 9.01	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL #: 1109016-18 Client ID#: JIHJ81-B1 pH After 5 Min: 9.71 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 250 pH After Extraction: 9.17	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL # 1109016-19 Client ID#: JIHJ81-C1 pH After 5 Min: 9.71 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 500 pH After Extraction: 9.35	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL #: 1109016-20 Client ID#: JIHJ81-C2 pH After 5 Min: 9.71 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 500 pH After Extraction: 9.31	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date [illegible] 9/12/11

SPI-1311.1-A-0310

Page #

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 1006

Start Date: 9-7-11 Start Time: 13:36 Analyst: RH SOP: SPI-1311.1	End Date: 9-8-11 End Time: 8:00 Analyst: RH Method: 1311.1	Tumbler Speed: 30 RPM Leachate Batch #: 409081 Leachate Page: 3 of 4 Room Temp. (°C): Start 21 /Finish 21 Acceptance Criteria: 23°C ± 2°

LvL #: 1109016-21 Client ID#: JIHJ82-A1 pH After 5 Min: 9.56 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 100 pH After Extraction: 8.46	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL #: 1109016-22 Client ID#: JIHJ82-A2 pH After 5 Min: 9.55 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 100 pH After Extraction: 8.43	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL # 1109016-23 Client ID#: JIHJ82-B1 pH After 5 Min: 9.55 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 250 pH After Extraction: 8.56	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL #: 1109016-24 Client ID#: JIHJ82-C1 pH After 5 Min: 9.55 pH After Acid/Heat: N/A Extraction Fluid/pH: 5.03 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 500 pH After Extraction: 8.64	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date Qm 9/12/11

SPI-1311.1-A-0310

Page #

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 1006

Start Date: 9-7-11 Start Time: 13:36 Analyst: RH SOP: SPI-1311.1	End Date: 9-8-11 End Time: 8:00 Analyst: RH Method: 1311.1	Tumbler Speed: 30 RPM Leachate Batch #: L109081 Leachate Page: 4 of 4 Room Temp. (°C): Start 21 /Finish 21 Acceptance Criteria: 23°C ± 2°

LvL #: L109081 Client ID#: N/A 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 8-11 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 RH Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date RPM 9/12/11

SPI-1311.1-A-0310

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000000043

Lionville Laboratory Use Only: 1109016

Custody Transfer Record/Lab Work Request

Page 1 of 23 rev 9-2-11

Lionville Laboratory
A Division of Eberline Analytical Corporation

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC Hanford SHF# RC-214
Est. Final Proj. Sampling Date:
Project#:
Project Contact/Phone#:
Lionville Laboratory Project Manager: O. Johnson
QC: SW Del: STD TAT: 15 days
Date Rec'd: 9-1-11 Date Due: 9-16-11

Refrigerator #							AB 1										
#/Type Container	Liquid																
	Solid						2P										
Volume	Liquid																
	Solid						1000										
Preservatives							—										
ANALYSES REQUESTED →		ORGANIC					SPRC EXT			INORG							
		VOA	BNA	Pest/PCB	Herb					Metal	CN						
Lionville Laboratory Use Only							Met① +H6										

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	Met① +H6
01	JIHJ 80 -1			S	8/24/11	0955	X
02	2						X
03	3						X
04	4						X
05	81 -1					1115	X
06	2						X
07	3						X
08	4						X
09	82 -1				8/27-11	0920	X
10	2						X

Special Instructions: Run matrix QC

Total Met① = PP+B, Mn, Mo, U

TCLP Met② = PP+B, Mn, Mo, U

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

See SRF

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9/1/11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL			
REWRITTEN			

000000044

Lionville Laboratory Use Only

1109016

Custody Transfer Record/Lab Work Request

Page 2 of 3

Lionville Laboratory
A Division of Eberline Analytical Corporation

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC Hanford SAF # RC-214
Est. Final Proj. Sampling Date:
Project#: 19
Project Contact/Phone#:
Lionville Laboratory Project Manager: O. Johnson
QC: Del: TAT:

Date Rec'd: 9-1-11 Date Due:

Refrigerator #						AB 1											
#/Type Container	Liquid																
	Solid					24			Leachates								
Volume	Liquid																
	Solid					100											
Preservatives						–											
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb	Spec Ext.			Metal	CN							
		Lionville Laboratory Use Only															
						MetO + Hg			MetO TCLP								

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															
11	JIHJ 82-3			S	8/27/11	0920					X										
12	↓ 4			↓	↓	↓					X										
13	80-A1			L	8-24-11	0955								X							
14	B1													X							
15	B2													X							
16	C1					↓								X							
17	81-A1					1115								X							
18	B1													X							
19	C1													X							
20	C2													X							

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9/1/11	1000

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

00000045

Lionville Laboratory Use Only

1109016

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Lionville Laboratory
A Division of Eberline Analytical Corporation

Client: WC HANFORD RC-214

Est. Final Proj. Sampling Date:

Project#: See Pg 1

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. Johnson

QC: Del: TAT:

Date Rec'd: 9-1-11 Date Due:

Refrigerator #

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal HE, CN

Lecoloxts

Lionville Laboratory Use Only

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	Metal HE
21	J1HJ82-A1			L	8-27-11	0920	X
22	A2						X
23	B1						X
24	C1						X

Special Instructions:

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

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

000000046

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-46	Page 1 of 1

Collector: C. FULTON	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH		SAF No.: RC-214
Ice Chest No.: GWS-16	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: ~~See OSPC~~ 7951 3915 4601

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation			None	Cool 4C	None	None						
Type of Container			G/P	aG	P	G/P						
No. of Container(s)			1	1	4	1						
Volume			250mL	250mL	1000mL	10mL						
SAMPLE ANALYSIS			See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium						
Sample No.	Matrix *	Sample Date	Sample Time									
J1HJ80	OTHER	8/24/11	0955	✓	✓	✓						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
C. FULTON	8/24/11 1200	SSU#1	8/24/11 1200
SSU-1	AUG 3 1 2011 0800	L.D. Wall CHPRC	AUG 3 1 2011 0800
L.D. Wall CHPRC	AUG 3 1 2011 1400	FEDEX	
Fed Ex	9-1-11 1000	VICTOR HERNANDEZ	9-1-11 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

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc}; Mercury - 7471 - (CV) (Manual)

REVIEWED BY DATE 8/25/11

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-47	Page 1 of 1

Collector: C. Fulton	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH		SAF No.: RC-214
Ice Chest No.: GWS-16	Field Logbook No.: EL-1658	COA: BESCAS6000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055		Bill of Lading/Air Bill No.: 7951 3915 4601 See ~~OSP~~C

000000048

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None	
Type of Container	G/P	aG	P	G/P	
No. of Container(s)	1	1	4	1	
Volume	250mL	250mL	1000mL	10mL	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium	

Sample No.	Matrix *	Sample Date	Sample Time									
J1HJ81	OTHER	8/24/11	~~1110~~ 1115	✓	✓	✓						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: C Fulton	8/24/11 1200	SSU #1	8/24/11 1201
Relinquished By/Removed From: SSU-1	AUG 31 2011 0800	Received By/Stored In: L.D. Wall	AUG 31 2011 0800
Relinquished By/Removed From: L.D. Wall	AUG 31 2011 1400	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FedEx	9-1-11 1000	Received By/Stored In: VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY DJ DATE 9/2/11

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-214-48	Page 1 of 1
Collector: Sparks	Company Contact: JOAN KESSNER Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9C Data Turnaround: 15 Days
Project Designation: Characterization of Hanford Site Coal Ash Components - Oth	Sampling Location: 126-H-1 DEPTH Sample point 17	SAF No.: RC-214	
Ice Chest No.: GW5-172	Field Logbook No.: EL-1658 COA: BESCAS6000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: 3055	Bill of Lading/Air Bill No.: See OSPC 7951 3915 4737	

POSSIBLE SAMPLE ~~HAZARDS~~/REMARKS

NA

Special Handling and/or Storage

Tie to RAD Screen J1HJ46

Preservation	None	Cool 4C	None	None							
Type of Container	G/P	aG	P	G/P							
No. of Container(s)	1	1	4	1							
Volume	250mL	250mL	1000mL	10mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8270	SPECIAL EXTRACTION - ASTM D3987	Total Uranium							
Sample No. / Matrix * / Sample Date / Sample Time											
J1HJ82 / OTHER / 8-22-11 / 0920	X	X	X								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Sparks	8-22-11 1500	SSU-1	8-22-11 1500
Relinquished By/Removed From	SSU-1	AUG 31 2011 1000	L.D. Wall	AUG 31 2011 1000
Relinquished By/Removed From	L.D. Wall	AUG 31 2011 1400	FEDEX	
Relinquished By/Removed From	FedEx	9-1-11 1000	VICTOR HERNANDEZ	9-1-11 1000
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

Hold TWO containers of Special Extraction for further instructions.

(1) ICP Metals - 6010TR (Client List) (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc); Mercury - 7471 - (CV) (Mercury)

REVIEWED BY

DATE 5-27-11

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

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hayford

Project SAF/SOW/Release #: RC-214

Date: 9/1/11

LvL Batch #: 1109016

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7951 3915 4601 1 1 4737
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 2.3° 3.4	°C	Cooler # GWS-16 GWS-172
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 _____

000000050

SR-002R Aug