0074053

SAF-RC-032
100-F Remaining Sites Burial Grounds - Soil Full Protocol
FINAL DATA PACKAGE

RECEIVED
OCT 05 2007
EDMC

COMPLETE COPY OF DATA PACKAGE TO:

Randy Coffman	X9-07	KW 9/25/07 INITIAL/DATE
Jeanette Duncan	H4-21	KW 9/25/07 INITIAL/DATE

COMMENTS:

SDG K0951 **SAF-RC-032**

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: **100-F-26:12 BCL Soil & Soil Debris/Verification**

EBERLINE
SERVICES

RECEIVED
SEP 2007

September 19, 2007

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

Reference: **P.O. #630**
Eberline Services R7-09-060-7869, SDG K0951

Dear Ms. Kessner:

Enclosed is the data report for nine solid (soil) samples designated under SAF No. RC-032 received at Eberline Services on September 11, 2007. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
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1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K0951 was composed of nine solid (soil) samples designated under SAF No. RC-032 with a Project Designation of: 100-F Remaining Sites Burial Grounds – Soil Full Protocol.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on September 19, 2007.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analyses

No problems were encountered during the course of the analyses.

2.2 Tritium Analysis

No problems were encountered during the course of the analyses.

2.3 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.4 Nickel-63 Analysis

No problems were encountered during the course of the analyses.

2.5 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.6 Gamma Spectroscopy

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."

Melissa Mann

Melissa C. Mannion
Senior Program Manager

09/19/7

Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K0951

SDG	7869
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG K0951

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

Melissa Mannion
Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	09/19/07

SDG 7869
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0951

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 Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/19/07

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.

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

SDG 7869
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0951

AB AMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
709060-01	J15H83	100-F-26:12BCLsoil/Verif	SOLID		RC-032	RC-032-154	09/06/07 08:00
709060-02	J15H84	100-F-26:12BCLsoil/Verif	SOLID		RC-032	RC-032-154	09/06/07 08:20
709060-03	J15H85	100-F-26:12BCLsoil/Verif	SOLID		RC-032	RC-032-154	09/06/07 08:40
709060-04	J15H97	100F26:12BCLsoilderis/vf	SOLID		RC-032	RC-032-155	09/06/07 08:50
709060-05	J15H98	100F26:12BCLsoilderis/vf	SOLID		RC-032	RC-032-155	09/06/07 09:05
709060-06	J15H99	100F26:12BCLsoilderis/vf	SOLID		RC-032	RC-032-155	09/06/07 09:20
709060-07	J15HB0	100F26:12BCLsoilderis/vf	SOLID		RC-032	RC-032-155	09/06/07 09:35
709060-08	J15HB1	100F26:12BCLsoilderis/vf	SOLID		RC-032	RC-032-155	09/06/07 09:50
709060-09	J15HB4	100F26:12BCLsoilderis/vf	SOLID		RC-032	RC-032-155	09/06/07 10:05
709060-10	Lab Control Sample		SOLID		RC-032		
709060-11	Method Blank		SOLID		RC-032		
709060-12	Duplicate (R709060-06)	100F26:12BCLsoilderis/vf	SOLID		RC-032		09/06/07 09:20
709060-13	Lab Control Sample		SOLID		RC-032		
709060-15	Method Blank		SOLID		RC-032		
709060-16	Duplicate (R709060-06)	100F26:12BCLsoilderis/vf	SOLID		RC-032		09/06/07 09:20

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

SDG 7869
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0951

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
9	RC-032-154	J15H83	SOLID	99.2	1622 g		09/11/07	5	R709060-01	7869-001
		J15H84	SOLID	99.3	1608 g		09/11/07	5	R709060-02	7869-002
		J15H85	SOLID	99.3	1634 g		09/11/07	5	R709060-03	7869-003
	RC-032-155	J15H97	SOLID	99.3	1636 g		09/11/07	5	R709060-04	7869-004
		J15H98	SOLID	99.2	1611 g		09/11/07	5	R709060-05	7869-005
		J15H99	SOLID	99.2	1642 g		09/11/07	5	R709060-06	7869-006
		J15HB0	SOLID	99.2	1613 g		09/11/07	5	R709060-07	7869-007
		J15HB1	SOLID	98.3	1486 g		09/11/07	5	R709060-08	7869-008
		J15HB4	SOLID	99.1	1637 g		09/11/07	5	R709060-09	7869-009
		Method Blank	SOLID						R709060-11	7869-011
		Method Blank	SOLID						R709060-15	7869-015
		Lab Control Sample	SOLID						R709060-10	7869-010
		Lab Control Sample	SOLID						R709060-13	7869-013
		Duplicate (R709060-06)	SOLID	99.2	1642 g		09/11/07	5	R709060-12	7869-012
		Duplicate (R709060-06)	SOLID	99.2	1642 g		09/11/07	5	R709060-16	7869-016

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

SDG 7869
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0951

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
SR	SOLID	Total Strontium in Solids	6126-190	10.0	9			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6126-190	20.0	9			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6126-190	15.0	9			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6126-190	15.0	9			1	1	1/1		
Liquid Scintillation Counting												
C	SOLID	Carbon 14 in Solids	6126-190	10.0	9			1	1	1/1		
H	SOLID	Tritium in Solids	6126-190	10.0	9			1	1	1/1		
NI_L	SOLID	Nickel 63 in Solids	6126-190	10.0	9			1	1	1/1		

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 09/19/07

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SAMPLE DELIVERY GROUP K0951

SDG 7869
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0951

SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
9060-01	J15H83			7869-001	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100-F-26:12BCL		soil/Verif SOLID	7869-001	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07	RC-032-154	RC-032		7869-001	C	A1	09/17/07	09/18/07	BW	Carbon 14 in Solids
				7869-001	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-001	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-001	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-001	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-02	J15H84			7869-002	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100-F-26:12BCL		soil/Verif SOLID	7869-002	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07	RC-032-154	RC-032		7869-002	C	A1	09/17/07	09/18/07	BW	Carbon 14 in Solids
				7869-002	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-002	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-002	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-002	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-03	J15H85			7869-003	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100-F-26:12BCL		soil/Verif SOLID	7869-003	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07	RC-032-154	RC-032		7869-003	C	A1	09/17/07	09/18/07	BW	Carbon 14 in Solids
				7869-003	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-003	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-003	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-003	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-04	J15H97			7869-004	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100F26:12BCL		soilderis/vf SOLID	7869-004	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07	RC-032-155	RC-032		7869-004	C	A1	09/17/07	09/18/07	BW	Carbon 14 in Solids
				7869-004	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-004	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-004	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-004	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-05	J15H98			7869-005	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100F26:12BCL		soilderis/vf SOLID	7869-005	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07	RC-032-155	RC-032		7869-005	C	A1	09/17/07	09/18/07	BW	Carbon 14 in Solids
				7869-005	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-005	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-005	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-005	SR		09/14/07	09/18/07	BW	Total Strontium in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

SDG 7869
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K0951

SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
9060-06	J15H99			7869-006	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100F26:12BCLsoilderis/vf		SOLID	7869-006	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07	RC-032-155	RC-032		7869-006	C	A1	09/17/07	09/18/07	BW	Carbon 14 in Solids
				7869-006	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-006	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-006	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-006	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-07	J15HB0			7869-007	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100F26:12BCLsoilderis/vf		SOLID	7869-007	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07	RC-032-155	RC-032		7869-007	C	A1	09/17/07	09/18/07	BW	Carbon 14 in Solids
				7869-007	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-007	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-007	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-007	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-08	J15HB1			7869-008	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100F26:12BCLsoilderis/vf		SOLID	7869-008	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07	RC-032-155	RC-032		7869-008	C	A1	09/17/07	09/18/07	BW	Carbon 14 in Solids
				7869-008	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-008	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-008	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-008	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-09	J15HB4			7869-009	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100F26:12BCLsoilderis/vf		SOLID	7869-009	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07	RC-032-155	RC-032		7869-009	C	A1	09/17/07	09/18/07	BW	Carbon 14 in Solids
				7869-009	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-009	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-009	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-009	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-10	Lab Control Sample			7869-010	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
			SOLID	7869-010	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
		RC-032		7869-010	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-010	H		09/15/07	09/18/07	BW	Tritium in Solids
				7869-010	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-010	SR		09/14/07	09/18/07	BW	Total Strontium in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

SDG 7869
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K0951

SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
9060-11	Method Blank			7869-011	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
			SOLID	7869-011	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
		RC-032		7869-011	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-011	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-011	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-011	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-12	Duplicate (R709060-06)			7869-012	93A/93		09/14/07	09/17/07	BW	Gross Alpha in Solids
09/06/07	100F26:12BCLsoilderis/vf		SOLID	7869-012	93B/93		09/14/07	09/17/07	BW	Gross Beta in Solids
09/11/07		RC-032		7869-012	GAM		09/14/07	09/18/07	CSS	Gamma Scan
				7869-012	H		09/14/07	09/18/07	BW	Tritium in Solids
				7869-012	NI_L		09/15/07	09/18/07	BW	Nickel 63 in Solids
				7869-012	SR		09/14/07	09/18/07	BW	Total Strontium in Solids
9060-13	Lab Control Sample			7869-013	C		09/18/07	09/18/07	BW	Carbon 14 in Solids
			SOLID							
		RC-032								
9060-15	Method Blank			7869-015	C		09/17/07	09/18/07	BW	Carbon 14 in Solids
			SOLID							
		RC-032								
9060-16	Duplicate (R709060-06)			7869-016	C		09/17/07	09/18/07	BW	Carbon 14 in Solids
09/06/07	100F26:12BCLsoilderis/vf		SOLID							
09/11/07		RC-032								

Lab id EBRLNE
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

SDG 7869
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K0951

COUNTS OF TESTS BY SAMPLE TYPE

EST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
3A/93	RC-032	Gross Alpha in Solids	900.0_ALPHABETA_GPC	9			1	1	1	12
3B/93	RC-032	Gross Beta in Solids	900.0_ALPHABETA_GPC	9			1	1	1	12
	RC-032	Carbon 14 in Solids	C14_COX_LSC	9			1	1	1	12
AM	RC-032	Gamma Scan	GAMMA_GS	9			1	1	1	12
	RC-032	Tritium in Solids	TRITIUM_COX_LSC	9			1	1	1	12
I_L	RC-032	Nickel 63 in Solids	NI63_LSC	9			1	1	1	12
R	RC-032	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	9			1	1	1	12
OTALS				63			7	7	7	84

Lab id EBRLNE
Protocol Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-011 **Method Blank**

METHOD BLANK

SDG	7869	Client/Case no	Hanford	SDG_K0951	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R709060-11	Client sample id	Method Blank		
Dept sample id	7869-011	Material/Matrix		SOLID	
		SAF No	RC-032		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.235	3.6	7.59	10.0	U	93A
Gross Beta	12587-47-2	-0.034	3.1	5.61	15.0	U	93B
Tritium	10028-17-8	0.365	2.5	4.23	400	U	H
Nickel 63	13981-37-8	0.532	1.7	2.84	30.0	U	NI_L
Total Strontium	SR-RAD	0.011	0.14	0.292	1.00	U	SR
Potassium 40	13966-00-2	U		0.089		U	GAM
Cobalt 60	10198-40-0	U		0.007	0.050	U	GAM
Cesium 137	10045-97-3	U		0.009	0.100	U	GAM
Radium 226	13982-63-3	U		0.022	0.100	U	GAM
Radium 228	15262-20-1	U		0.036	0.200	U	GAM
Europium 152	14683-23-9	U		0.028	0.100	U	GAM
Europium 154	15585-10-1	U		0.029	0.100	U	GAM
Europium 155	14391-16-3	U		0.017	0.100	U	GAM
Thorium 228	14274-82-9	U		0.014		U	GAM
Thorium 232	TH-232	U		0.036		U	GAM
Uranium 235	15117-96-1	U		0.035		U	GAM
Uranium 238	U-238	U		0.931		U	GAM
Americium 241	14596-10-2	U		0.012		U	GAM
Silver 108m	14391-65-2	U		0.007		U	GAM
Barium 133	13981-41-4	U		0.009		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

QC-BLANK #62770

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-015 Method Blank

METHOD BLANK

SDG	7869	Client/Case no	Hanford SDG K0951
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R709060-15	Client sample id	Method Blank
Dept sample id	7869-015	Material/Matrix	SOLID
		SAF No	RC-032

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.236	2.1	3.51	50.0	U	C

100-F Remain.SitesBurialGrnds-SoilFP

QC-BLANK #62817

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-010

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7869

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0951

Contract No. 630

Lab sample id R709060-10

Dept sample id 7869-010

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-032

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	108	18	9.92	10.0		93A	101	4.0	107	58-142	70-130
Gross Beta	89.8	7.2	5.80	15.0		93B	94.9	3.8	95	75-125	80-120
Tritium	600	12	4.38	400		H	638	26	94	84-116	80-120
Nickel 63	211	5.6	2.71	30.0		NI_L	222	8.9	95	84-116	80-120
Total Strontium	9.99	0.55	0.234	1.00		SR	9.49	0.38	105	81-119	80-120
Cobalt 60	0.575	0.049	0.017	0.050		GAM	0.565	0.023	102	73-127	80-120
Cesium 137	0.570	0.043	0.030	0.100		GAM	0.566	0.023	101	74-126	80-120

100-F Remain.SitesBurialGrnds-SoilFP

QC-LCS #62769

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-013

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7869

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0951

Contract No. 630

Lab sample id R709060-13

Dept sample id 7869-013

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-032

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	1660	15	3.44	50.0		C	1600	64	104	83-117	80-120

100-F Remain.SitesBurialGrnds-SoilFP

QC-LCS #62815

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-012 J15H99

DUPLICATE

SDG	7869			Client/Case no	Hanford SDG K0951
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R709060-12	Lab sample id	R709060-06	Client sample id	J15H99
Dept sample id	7869-012	Dept sample id	7869-006	Location/Matrix	100F26:12BCLsoilderis/vf SOLID
		Received	09/11/07	Collected/Weight	09/06/07 09:20 1642 g
% solids	99.2	% solids	99.2	Custody/SAF No	RC-032-155 RC-032

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	11.4	6.5	8.16	10.0		93A	12.8	8.5	12.0		12	139	0.2
Gross Beta	16.5	5.8	9.04	15.0		93B	23.5	5.0	6.17		35	66	1.6
Tritium	1.66	2.2	3.71	400	U	H	-0.754	2.1	3.75	U	-		1.6
Nickel 63	2.83	1.9	3.07	30.0	U	NI_L	0.349	1.7	2.80	U	-		1.9
Total Strontium	0.064	0.16	0.302	1.00	U	SR	0.124	0.16	0.290	U	-		0.5
Potassium 40	13.3	0.56	0.250			GAM	14.1	0.58	0.266		6	33	0.5
Cobalt 60	U		0.022	0.050	U	GAM	U		0.022	U	-		0
Cesium 137	U		0.024	0.100	U	GAM	U		0.024	U	-		0
Radium 226	0.482	0.048	0.041	0.100		GAM	0.420	0.045	0.043		14	39	1.1
Radium 228	0.823	0.13	0.104	0.200		GAM	0.656	0.11	0.104		23	47	1.4
Europium 152	U		0.060	0.100	U	GAM	U		0.063	U	-		0.1
Europium 154	U		0.076	0.100	U	GAM	U		0.076	U	-		0
Europium 155	U		0.082	0.100	U	GAM	U		0.082	U	-		0
Thorium 228	0.604	0.034	0.033			GAM	0.623	0.034	0.034		3	34	0.3
Thorium 232	0.823	0.13	0.104			GAM	0.656	0.11	0.104		23	47	1.4
Uranium 235	U		0.115		U	GAM	U		0.112	U	-		0
Uranium 238	U		2.51		U	GAM	U		2.71	U	-		0.1
Americium 241	U		0.159		U	GAM	U		0.157	U	-		0
Silver 108m	U		0.017		U	GAM	U		0.017	U	-		0
Barium 133	U		0.025		U	GAM	U		0.025	U	-		0

100-F Remain.SitesBurialGrnds-SoilFP

QC-DUP#6 62771

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-016 J15H99

DUPLICATE

SDG	7869			Client/Case no	Hanford SDG K0951
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R709060-16	Lab sample id	R709060-06	Client sample id	J15H99
Dept sample id	7869-016	Dept sample id	7869-006	Location/Matrix	100F26:12BCLsoilderis/vf SOLID
		Received	09/11/07	Collected/Weight	09/06/07 09:20 1642 g
% solids	99.2	% solids	99.2	Custody/SAF No	RC-032-155 RC-032

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Carbon 14	5.54	2.0	3.04	50.0		C	5.10	2.0	3.09		8	83	0.3

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-001 **J15H83**

DATA SHEET

SDG	7869	Client/Case no	Hanford SDG_K0951
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R709060-01	Client sample id	J15H83
Dept sample id	7869-001	Location/Matrix	100-F-26:12BCLsoil/Verif SOLID
Received	09/11/07	Collected/Weight	09/06/07 08:00 1622 g
% solids	99.2	Custody/SAF No	RC-032-154 RC-032

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	6.75	6.7	10.1	10.0	U	93A
Gross Beta	12587-47-2	18.4	5.7	8.63	15.0		93B
Tritium	10028-17-8	-0.275	2.2	3.83	400	U	H
Carbon 14	14762-75-5	-1.39	1.7	3.02	50.0	U	C
Nickel 63	13981-37-8	2.13	1.9	3.05	30.0	U	NI_L
Total Strontium	SR-RAD	-0.039	0.13	0.286	1.00	U	SR
Potassium 40	13966-00-2	12.9	0.69	0.254			GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	0.438	0.049	0.043	0.100		GAM
Radium 228	15262-20-1	0.644	0.13	0.124	0.200		GAM
Europium 152	14683-23-9	U		0.072	0.100	U	GAM
Europium 154	15585-10-1	U		0.097	0.100	U	GAM
Europium 155	14391-16-3	U		0.066	0.100	U	GAM
Thorium 228	14274-82-9	0.671	0.036	0.035			GAM
Thorium 232	TH-232	0.644	0.13	0.124			GAM
Uranium 235	15117-96-1	U		0.109		U	GAM
Uranium 238	U-238	U		3.31		U	GAM
Americium 241	14596-10-2	U		0.037		U	GAM
Silver 108m	14391-65-2	U		0.021		U	GAM
Barium 133	13981-41-4	U		0.030		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-002 J15H84

DATA SHEET

SDG	7869	Client/Case no	Hanford SDG_K0951
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R709060-02	Client sample id	J15H84
Dept sample id	7869-002	Location/Matrix	100-F-26:12BCLsoil/Verif SOLID
Received	09/11/07	Collected/Weight	09/06/07 08:20 1608 g
% solids	99.3	Custody/SAF No	RC-032-154 RC-032

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	11.3	6.0	7.01	10.0		93A
Gross Beta	12587-47-2	20.8	4.3	5.42	15.0		93B
Tritium	10028-17-8	-0.520	2.1	3.62	400	U	H
Carbon 14	14762-75-5	22.5	2.5	3.16	50.0		C
Nickel 63	13981-37-8	1.15	1.8	2.99	30.0	U	NI_L
Total Strontium	SR-RAD	0.062	0.17	0.320	1.00	U	SR
Potassium 40	13966-00-2	13.4	0.52	0.190			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	0.026	0.018	0.022	0.100		GAM
Radium 226	13982-63-3	0.392	0.040	0.040	0.100		GAM
Radium 228	15262-20-1	0.627	0.093	0.088	0.200		GAM
Europium 152	14683-23-9	U		0.060	0.100	U	GAM
Europium 154	15585-10-1	U		0.070	0.100	U	GAM
Europium 155	14391-16-3	U		0.076	0.100	U	GAM
Thorium 228	14274-82-9	0.559	0.030	0.029			GAM
Thorium 232	TH-232	0.627	0.093	0.088			GAM
Uranium 235	15117-96-1	U		0.104		U	GAM
Uranium 238	U-238	U		2.48		U	GAM
Americium 241	14596-10-2	U		0.144		U	GAM
Silver 108m	14391-65-2	U		0.016		U	GAM
Barium 133	13981-41-4	U		0.023		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-003 **J15H85**

DATA SHEET

SDG	7869	Client/Case no	Hanford SDG K0951
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R709060-03	Client sample id	J15H85
Dept sample id	7869-003	Location/Matrix	100-F-26:12BCLsoil/Verif SOLID
Received	09/11/07	Collected/Weight	09/06/07 08:40 1634 g
% solids	99.3	Custody/SAF No	RC-032-154 RC-032

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	10.1	5.8	6.43	10.0		93A
Gross Beta	12587-47-2	20.3	4.5	5.67	15.0		93B
Tritium	10028-17-8	0.105	2.1	3.64	400	U	H
Carbon 14	14762-75-5	-0.184	1.9	3.20	50.0	U	C
Nickel 63	13981-37-8	1.80	1.8	3.00	30.0	U	NI_L
Total Strontium	SR-RAD	0.006	0.14	0.285	1.00	U	SR
Potassium 40	13966-00-2	13.4	1.8	0.116			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	0.056	0.022	0.024	0.100		GAM
Radium 226	13982-63-3	0.470	0.050	0.044	0.100		GAM
Radium 228	15262-20-1	0.642	0.26	0.088	0.200		GAM
Europium 152	14683-23-9	0.081	0.046	0.061	0.100		GAM
Europium 154	15585-10-1	U		0.077	0.100	U	GAM
Europium 155	14391-16-3	U		0.051	0.100	U	GAM
Thorium 228	14274-82-9	0.674	0.031	0.027			GAM
Thorium 232	TH-232	0.642	0.26	0.088			GAM
Uranium 235	15117-96-1	U		0.093		U	GAM
Uranium 238	U-238	U		2.70		U	GAM
Americium 241	14596-10-2	U		0.037		U	GAM
Silver 108m	14391-65-2	U		0.015		U	GAM
Barium 133	13981-41-4	U		0.019		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-004 J15H97

DATA SHEET

SDG	7869	Client/Case no	Hanford	SDG_K0951	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R709060-04	Client sample id	J15H97		
Dept sample id	7869-004	Location/Matrix	100F26:12BCLsoilderis/vf	SOLID	
Received	09/11/07	Collected/Weight	09/06/07 08:50	1636 g	
% solids	99.3	Custody/SAF No	RC-032-155	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	7.54	5.2	6.53	10.0		93A
Gross Beta	12587-47-2	18.4	4.7	6.30	15.0		93B
Tritium	10028-17-8	0.641	2.2	3.72	400	U	H
Carbon 14	14762-75-5	1.09	2.1	3.44	50.0	U	C
Nickel 63	13981-37-8	1.64	1.8	2.99	30.0	U	NI_L
Total Strontium	SR-RAD	0.390	0.16	0.232	1.00		SR
Potassium 40	13966-00-2	13.2	0.73	0.283			GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.100	U	GAM
Radium 226	13982-63-3	0.469	0.061	0.053	0.100		GAM
Radium 228	15262-20-1	0.593	0.12	0.123	0.200		GAM
Europium 152	14683-23-9	U		0.078	0.100	U	GAM
Europium 154	15585-10-1	U		0.106	0.100	U	GAM
Europium 155	14391-16-3	U		0.072	0.100	U	GAM
Thorium 228	14274-82-9	0.637	0.040	0.039			GAM
Thorium 232	TH-232	0.593	0.12	0.123			GAM
Uranium 235	15117-96-1	U		0.121		U	GAM
Uranium 238	U-238	U		3.60		U	GAM
Americium 241	14596-10-2	U		0.040		U	GAM
Silver 108m	14391-65-2	U		0.022		U	GAM
Barium 133	13981-41-4	U		0.032		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-005 **J15H98**

DATA SHEET

SDG	7869	Client/Case no	Hanford	SDG_K0951	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R709060-05	Client sample id	J15H98		
Dept sample id	7869-005	Location/Matrix	100F26:12BCLsoilderis/vf	SOLID	
Received	09/11/07	Collected/Weight	09/06/07 09:05	1611 g	
% solids	99.2	Custody/SAF No	RC-032-155	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.644	4.8	8.53	10.0	U	93A
Gross Beta	12587-47-2	18.3	4.3	5.65	15.0		93B
Tritium	10028-17-8	-0.924	2.0	3.57	400	U	H
Carbon 14	14762-75-5	-1.72	1.9	3.26	50.0	U	C
Nickel 63	13981-37-8	2.97	1.9	3.02	30.0	U	NI_L
Total Strontium	SR-RAD	0.563	0.16	0.218	1.00		SR
Potassium 40	13966-00-2	14.2	0.82	0.344			GAM
Cobalt 60	10198-40-0	U		0.037	0.050	U	GAM
Cesium 137	10045-97-3	0.079	0.035	0.039	0.100		GAM
Radium 226	13982-63-3	0.484	0.072	0.070	0.100		GAM
Radium 228	15262-20-1	0.776	0.17	0.174	0.200		GAM
Europium 152	14683-23-9	U		0.097	0.100	U	GAM
Europium 154	15585-10-1	U		0.128	0.100	U	GAM
Europium 155	14391-16-3	U		0.108	0.100	U	GAM
Thorium 228	14274-82-9	0.700	0.067	0.070			GAM
Thorium 232	TH-232	0.776	0.17	0.174			GAM
Uranium 235	15117-96-1	U		0.161		U	GAM
Uranium 238	U-238	U		4.43		U	GAM
Americium 241	14596-10-2	U		0.280		U	GAM
Silver 108m	14391-65-2	U		0.028		U	GAM
Barium 133	13981-41-4	U		0.036		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-006 **J15H99**

DATA SHEET

SDG	7869	Client/Case no	Hanford	SDG_K0951	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R709060-06	Client sample id	J15H99		
Dept sample id	7869-006	Location/Matrix	100F26:12BCLsoilderis/vf	SOLID	
Received	09/11/07	Collected/Weight	09/06/07 09:20	1642 g	
% solids	99.2	Custody/SAF No	RC-032-155	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	12.8	8.5	12.0	10.0		93A
Gross Beta	12587-47-2	23.5	5.0	6.17	15.0		93B
Tritium	10028-17-8	-0.754	2.1	3.75	400	U	H
Carbon 14	14762-75-5	5.10	2.0	3.09	50.0		C
Nickel 63	13981-37-8	0.349	1.7	2.80	30.0	U	NI_L
Total Strontium	SR-RAD	0.124	0.16	0.290	1.00	U	SR
Potassium 40	13966-00-2	14.1	0.58	0.266			GAM
Cobalt 60	10198-40-0	U		0.022	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.100	U	GAM
Radium 226	13982-63-3	0.420	0.045	0.043	0.100		GAM
Radium 228	15262-20-1	0.656	0.11	0.104	0.200		GAM
Europium 152	14683-23-9	U		0.063	0.100	U	GAM
Europium 154	15585-10-1	U		0.076	0.100	U	GAM
Europium 155	14391-16-3	U		0.082	0.100	U	GAM
Thorium 228	14274-82-9	0.623	0.034	0.034			GAM
Thorium 232	TH-232	0.656	0.11	0.104			GAM
Uranium 235	15117-96-1	U		0.112		U	GAM
Uranium 238	U-238	U		2.71		U	GAM
Americium 241	14596-10-2	U		0.157		U	GAM
Silver 108m	14391-65-2	U		0.017		U	GAM
Barium 133	13981-41-4	U		0.025		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-007 J15HB0

DATA SHEET

SDG	7869	Client/Case no	Hanford SDG_K0951
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R709060-07	Client sample id	J15HB0
Dept sample id	7869-007	Location/Matrix	100F26:12BCLsoilderis/vf SOLID
Received	09/11/07	Collected/Weight	09/06/07 09:35 1613 g
% solids	99.2	Custody/SAF No	RC-032-155 RC-032

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	12.9	6.7	8.06	10.0		93A
Gross Beta	12587-47-2	13.2	5.7	9.04	15.0		93B
Tritium	10028-17-8	1.19	2.3	3.77	400	U	H
Carbon 14	14762-75-5	-0.244	1.9	3.18	50.0	U	C
Nickel 63	13981-37-8	1.42	1.8	2.93	30.0	U	NI_L
Total Strontium	SR-RAD	0.042	0.14	0.283	1.00	U	SR
Potassium 40	13966-00-2	13.6	0.60	0.267			GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982-63-3	0.525	0.056	0.051	0.100		GAM
Radium 228	15262-20-1	0.785	0.11	0.105	0.200		GAM
Europium 152	14683-23-9	U		0.068	0.100	U	GAM
Europium 154	15585-10-1	U		0.086	0.100	U	GAM
Europium 155	14391-16-3	U		0.060	0.100	U	GAM
Thorium 228	14274-82-9	0.725	0.035	0.029			GAM
Thorium 232	TH-232	0.785	0.11	0.105			GAM
Uranium 235	15117-96-1	U		0.106		U	GAM
Uranium 238	U-238	U		2.97		U	GAM
Americium 241	14596-10-2	U		0.044		U	GAM
Silver 108m	14391-65-2	U		0.018		U	GAM
Barium 133	13981-41-4	U		0.023		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-008 J15HB1

DATA SHEET

SDG	7869	Client/Case no	Hanford	SDG_K0951	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R709060-08	Client sample id	J15HB1		
Dept sample id	7869-008	Location/Matrix	100F26:12BCLsoilderis/vf	SOLID	
Received	09/11/07	Collected/Weight	09/06/07 09:50	1486 g	
% solids	98.3	Custody/SAF No	RC-032-155	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	5.09	6.4	10.1	10.0	U	93A
Gross Beta	12587-47-2	20.1	5.7	8.63	15.0		93B
Tritium	10028-17-8	0.968	2.2	3.74	400	U	H
Carbon 14	14762-75-5	62.7	3.3	3.16	50.0		C
Nickel 63	13981-37-8	1.57	1.7	2.80	30.0	U	NI_L
Total Strontium	SR-RAD	-0.032	0.10	0.220	1.00	U	SR
Potassium 40	13966-00-2	13.9	0.56	0.245			GAM
Cobalt 60	10198-40-0	U		0.022	0.050	U	GAM
Cesium 137	10045-97-3	0.025	0.017	0.020	0.100		GAM
Radium 226	13982-63-3	0.440	0.047	0.044	0.100		GAM
Radium 228	15262-20-1	0.712	0.10	0.089	0.200		GAM
Europium 152	14683-23-9	U		0.060	0.100	U	GAM
Europium 154	15585-10-1	U		0.077	0.100	U	GAM
Europium 155	14391-16-3	U		0.080	0.100	U	GAM
Thorium 228	14274-82-9	0.627	0.033	0.032			GAM
Thorium 232	TH-232	0.712	0.10	0.089			GAM
Uranium 235	15117-96-1	U		0.108		U	GAM
Uranium 238	U-238	U		2.53		U	GAM
Americium 241	14596-10-2	U		0.160		U	GAM
Silver 108m	14391-65-2	U		0.017		U	GAM
Barium 133	13981-41-4	U		0.024		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

7869-009 J15HB4

DATA SHEET

SDG	7869	Client/Case no	Hanford	SDG_K0951	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R709060-09	Client sample id	J15HB4		
Dept sample id	7869-009	Location/Matrix	100F26:12BCLsoilderis/vf	SOLID	
Received	09/11/07	Collected/Weight	09/06/07 10:05	1637 g	
% solids	99.1	Custody/SAF No	RC-032-155	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	9.25	5.8	7.32	10.0		93A
Gross Beta	12587-47-2	17.3	4.1	5.42	15.0		93B
Tritium	10028-17-8	-0.941	2.1	3.64	400	U	H
Carbon 14	14762-75-5	-1.67	1.9	3.34	50.0	U	C
Nickel 63	13981-37-8	2.91	1.9	2.96	30.0	U	NI_L
Total Strontium	SR-RAD	0.068	0.24	0.396	1.00	U	SR
Potassium 40	13966-00-2	13.4	0.73	0.281			GAM
Cobalt 60	10198-40-0	U		0.029	0.050	U	GAM
Cesium 137	10045-97-3	0.041	0.025	0.028	0.100		GAM
Radium 226	13982-63-3	0.412	0.052	0.047	0.100		GAM
Radium 228	15262-20-1	0.640	0.12	0.112	0.200		GAM
Europium 152	14683-23-9	U		0.075	0.100	U	GAM
Europium 154	15585-10-1	U		0.105	0.100	U	GAM
Europium 155	14391-16-3	U		0.069	0.100	U	GAM
Thorium 228	14274-82-9	0.623	0.036	0.035			GAM
Thorium 232	TH-232	0.640	0.12	0.112			GAM
Uranium 235	15117-96-1	U		0.113		U	GAM
Uranium 238	U-238	U		3.51		U	GAM
Americium 241	14596-10-2	U		0.038		U	GAM
Silver 108m	14391-65-2	U		0.021		U	GAM
Barium 133	13981-41-4	U		0.031		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test SR Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
paration batch 6126-190					
9060-01			7869-001	J15H83	U
9060-02			7869-002	J15H84	U
9060-03			7869-003	J15H85	U
9060-04			7869-004	J15H97	0.390
9060-05			7869-005	J15H98	0.563
9060-06			7869-006	J15H99	U
9060-07			7869-007	J15HB0	U
9060-08			7869-008	J15HB1	U
9060-09			7869-009	J15HB4	U
9060-10			7869-010	Lab Control Sample	ok
9060-11			7869-011	Method Blank	U
9060-12			7869-012	Duplicate (R709060-06)	- U

inal values and limits from method RDLs (pCi/g) 1.00
-F Remain.SitesBurialGrnds-SoilFP

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test SR Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6126-190			2σ prep error 10.0 % Reference Lab Notebook #6126, pg. 190													
060-01			J15H83	0.286	1.00			98		100			8	09/14/07	09/14	GRB-217
060-02			J15H84	0.320	1.00			97		100			8	09/14/07	09/14	GRB-219
060-03			J15H85	0.285	1.00			97		100			8	09/14/07	09/14	GRB-220
060-04			J15H97	0.232	1.00			97		100			8	09/14/07	09/14	GRB-201
060-05			J15H98	0.218	1.00			96		100			8	09/14/07	09/14	GRB-202
060-06			J15H99	0.290	1.00			96		100			8	09/14/07	09/14	GRB-223
060-07			J15HB0	0.283	1.00			97		100			8	09/14/07	09/14	GRB-224
060-08			J15HB1	0.220	1.00			96		100			8	09/14/07	09/14	GRB-203
060-09			J15HB4	0.396	1.00			96		100			8	09/14/07	09/14	GRB-226
060-10			Lab Control Sample	0.234	1.00			94		100				09/14/07	09/14	GRB-204
060-11			Method Blank	0.292	1.00			94		100				09/14/07	09/14	GRB-228
060-12			Duplicate (R709060-06)	0.302	1.00			97		100			8	09/14/07	09/14	GRB-201
inal values and limits from method				1.00	1.00			30-105		100			180			

ROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-061	Determination of Moisture Content in Solid Samples rev 0
	SPP-060	Soil Preparation, rev 0
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 12 SAMPLES	MDA	0.280	±	0.100
	YIELD	96	±	2

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test 93A Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
paration batch 6126-190					
9060-01	93		7869-001	J15H83	U
9060-02	93		7869-002	J15H84	11.3
9060-03	93		7869-003	J15H85	10.1
9060-04	93		7869-004	J15H97	7.54
9060-05	93		7869-005	J15H98	U
9060-06	93		7869-006	J15H99	12.8
9060-07	93		7869-007	J15HB0	12.9
9060-08	93		7869-008	J15HB1	U
9060-09	93		7869-009	J15HB4	9.25
9060-10	93		7869-010	Lab Control Sample	ok
9060-11	93		7869-011	Method Blank	U
9060-12	93		7869-012	Duplicate (R709060-06)	ok

inal values and limits from method RDLs (pCi/g) 10.0
-F Remain.SitesBurialGrnds-SoilFP

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test 93A Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6126-190			2σ prep error 20.0 % Reference Lab Notebook #6126, pg. 190													
9060-01	93		J15H83	10.1	0.100			39		100			8	09/13/07	09/14	GRB-214
9060-02	93		J15H84	7.01	0.100			38		100			8	09/13/07	09/14	GRB-216
9060-03	93		J15H85	6.43	0.100			39		100			8	09/13/07	09/14	GRB-109
9060-04	93		J15H97	6.53	0.100			38		100			8	09/13/07	09/14	GRB-110
9060-05	93		J15H98	8.53	0.100			39		100			8	09/13/07	09/14	GRB-112
9060-06	93		J15H99	12.0	0.100			39		100			8	09/13/07	09/14	GRB-115
9060-07	93		J15HB0	8.06	0.100			39		100			8	09/13/07	09/14	GRB-213
9060-08	93		J15HB1	10.1	0.100			39		100			8	09/13/07	09/14	GRB-214
9060-09	93		J15HB4	7.32	0.100			40		100			8	09/13/07	09/14	GRB-216
9060-10	93		Lab Control Sample	9.92	0.100			60		100				09/13/07	09/14	GRB-209
9060-11	93		Method Blank	7.59	0.100			60		100				09/13/07	09/14	GRB-211
9060-12	93		Duplicate (R709060-06)	8.16	0.100			40		100			8	09/13/07	09/14	GRB-213
inal values and limits from method				10.0	0.100			5-250		100			180			

ROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD	MDA	8.48	± 3.43
FOR 12 SAMPLES	RESIDUE	42	± 16

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test 93B Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
paration batch 6126-190					
9060-01	93		7869-001	J15H83	18.4
9060-02	93		7869-002	J15H84	20.8
9060-03	93		7869-003	J15H85	20.3
9060-04	93		7869-004	J15H97	18.4
9060-05	93		7869-005	J15H98	18.3
9060-06	93		7869-006	J15H99	23.5
9060-07	93		7869-007	J15HB0	13.2
9060-08	93		7869-008	J15HB1	20.1
9060-09	93		7869-009	J15HB4	17.3
9060-10	93		7869-010	Lab Control Sample	ok
9060-11	93		7869-011	Method Blank	U
9060-12	93		7869-012	Duplicate (R709060-06)	ok

inal values and limits from method RDLs (pCi/g) 15.0
-F Remain.SitesBurialGrnds-SoilFP

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test 93B Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6126-190			2σ prep error 15.0 % Reference Lab Notebook #6126, pg. 190													
9060-01	93		J15H83	8.63	0.100			39		100			8	09/13/07	09/14	GRB-214
9060-02	93		J15H84	5.42	0.100			38		100			8	09/13/07	09/14	GRB-216
9060-03	93		J15H85	5.67	0.100			39		100			8	09/13/07	09/14	GRB-109
9060-04	93		J15H97	6.30	0.100			38		100			8	09/13/07	09/14	GRB-110
9060-05	93		J15H98	5.65	0.100			39		100			8	09/13/07	09/14	GRB-112
9060-06	93		J15H99	6.17	0.100			39		100			8	09/13/07	09/14	GRB-115
9060-07	93		J15HB0	9.04	0.100			39		100			8	09/13/07	09/14	GRB-213
9060-08	93		J15HB1	8.63	0.100			39		100			8	09/13/07	09/14	GRB-214
9060-09	93		J15HB4	5.42	0.100			40		100			8	09/13/07	09/14	GRB-216
9060-10	93		Lab Control Sample	5.80	0.100			60		100				09/13/07	09/14	GRB-209
9060-11	93		Method Blank	5.61	0.100			60		100				09/13/07	09/14	GRB-211
9060-12	93		Duplicate (R709060-06)	9.04	0.100			40		100			8	09/13/07	09/14	GRB-213
inal values and limits from method				15.0	0.100			5-250		100			180			

ROCEDURES REFERENCE 900.0_ALPHABETA_GPC
SPP-071 Soil Dissolution, > 1.0g Aliquot, rev 5
SPP-125 Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 12 SAMPLES
MDA 6.78 ± 3.09
RESIDUE 42 ± 16

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test GAM Matrix SOLID
SDG 7869
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0951

SULTS

?LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
)aration batch 6126-190						
)060-01			7869-001	J15H83	U	U
)060-02			7869-002	J15H84	U	0.026
)060-03			7869-003	J15H85	U	0.056
)060-04			7869-004	J15H97	U	U
)060-05			7869-005	J15H98	U	0.079
)060-06			7869-006	J15H99	U	U
)060-07			7869-007	J15HB0	U	U
)060-08			7869-008	J15HB1	U	0.025
)060-09			7869-009	J15HB4	U	0.041
)060-10			7869-010	Lab Control Sample	ok	ok
)060-11			7869-011	Method Blank	U	U
)060-12			7869-012	Duplicate (R709060-06)	- U	- U
inal values and limits from method				RDLs (pCi/g)	0.050	0.100
-F Remain.SitesBurialGrnds-SoilFP						

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test GAM Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0951

ITHOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6126-190			2σ prep error 15.0 % Reference Lab Notebook #6126, pg. 190													
9060-01			J15H83	5.53	878					113			8	09/13/07	09/14	MB,06,00
9060-02			J15H84	4.60	888					113			8	09/13/07	09/14	MB,08,00
9060-03			J15H85	3.82	900					141			8	09/13/07	09/14	MB,07,00
9060-04			J15H97	6.10	873					101			8	09/13/07	09/14	MB,06,00
9060-05			J15H98	7.03	876					101			8	09/13/07	09/14	MB,05,00
9060-06			J15H99	4.97	842					101			8	09/13/07	09/14	MB,08,00
9060-07			J15HB0	4.11	871					108			8	09/13/07	09/14	MB,07,00
9060-08			J15HB1	4.88	856					108			8	09/13/07	09/14	MB,08,00
9060-09			J15HB4	6.10	872					108			8	09/13/07	09/14	MB,06,00
9060-10			Lab Control Sample	0.017	841					108				09/13/07	09/14	MB,05,00
9060-11			Method Blank	3.16	841					106				09/13/07	09/14	MB,07,00
9060-12			Duplicate (R709060-06)	8.36	842					106			8	09/13/07	09/14	MB,08,00
inal values and limits from method				0.050	841					100			180			

ROCEDURES REFERENCE GAMMA_GS
SPP-100 Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD FOR 12 SAMPLES
MDA 4.89 ± 4.20
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test C Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Carbon 14
paration batch 6126-190					
9060-01		A1	7869-001	J15H83	U
9060-02		A1	7869-002	J15H84	22.5
9060-03		A1	7869-003	J15H85	U
9060-04		A1	7869-004	J15H97	U
9060-05		A1	7869-005	J15H98	U
9060-06		A1	7869-006	J15H99	5.10
9060-07		A1	7869-007	J15HB0	U
9060-08		A1	7869-008	J15HB1	62.7
9060-09		A1	7869-009	J15HB4	U
9060-13			7869-013	Lab Control Sample	ok
9060-15			7869-015	Method Blank	U
9060-16			7869-016	Duplicate (R709060-06)	ok

inal values and limits from method RDLs (pCi/g) 50.0
-F Remain.SitesBurialGrnds-SoilFP

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test C Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6126-190			2σ prep error 10.0 % Reference Lab Notebook #6126, pg. 190													
9060-01		A1	J15H83	3.02	0.459			100		50			11	09/17/07	09/17	LSC-004
9060-02		A1	J15H84	3.16	0.434			100		50			11	09/17/07	09/17	LSC-004
9060-03		A1	J15H85	3.20	0.440			100		50			11	09/17/07	09/17	LSC-004
9060-04		A1	J15H97	3.44	0.407			100		50			11	09/17/07	09/17	LSC-004
9060-05		A1	J15H98	3.26	0.428			100		50			11	09/17/07	09/17	LSC-004
9060-06		A1	J15H99	3.09	0.452			100		50			11	09/17/07	09/17	LSC-004
9060-07		A1	J15HB0	3.18	0.442			100		50			11	09/17/07	09/17	LSC-004
9060-08		A1	J15HB1	3.16	0.441			100		50			11	09/17/07	09/17	LSC-004
9060-09		A1	J15HB4	3.34	0.422			100		50			11	09/17/07	09/17	LSC-004
9060-13			Lab Control Sample	3.44	0.400			100		50				09/17/07	09/18	LSC-004
9060-15			Method Blank	3.51	0.400			100		50				09/17/07	09/17	LSC-004
9060-16			Duplicate (R709060-06)	3.04	0.455			100		50			11	09/17/07	09/17	LSC-004
inal values and limits from method				50.0	0.400					10			180			

ROCEDURES REFERENCE C14_COX_LSC
CP-251 Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD FOR 12 SAMPLES
MDA 3.24 ± 0.326
YIELD 100 ± 0

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test H Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
paration batch 6126-190						
9060-01			7869-001	J15H83	U	
9060-02			7869-002	J15H84	U	
9060-03			7869-003	J15H85	U	
9060-04			7869-004	J15H97	U	
9060-05			7869-005	J15H98	U	
9060-06			7869-006	J15H99	U	
9060-07			7869-007	J15HB0	U	
9060-08			7869-008	J15HB1	U	
9060-09			7869-009	J15HB4	U	
9060-10			7869-010	Lab Control Sample	ok	
9060-11			7869-011	Method Blank	U	
9060-12			7869-012	Duplicate (R709060-06)	-	U

inal values and limits from method RDLs (pCi/g) 400
-F Remain.SitesBurialGrnds-SoilFP

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

Test H Matrix SOLID
SDG 7869
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

ETHOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6126-190			2σ prep error 10.0 % Reference Lab Notebook #6126, pg. 190													
9060-01			J15H83	3.83	0.441			100		50			8	09/13/07	09/14	LSC-004
9060-02			J15H84	3.62	0.467			100		50			8	09/13/07	09/14	LSC-004
9060-03			J15H85	3.64	0.461			100		50			8	09/13/07	09/14	LSC-004
9060-04			J15H97	3.72	0.453			100		50			8	09/13/07	09/14	LSC-004
9060-05			J15H98	3.57	0.470			100		50			8	09/13/07	09/14	LSC-004
9060-06			J15H99	3.75	0.450			100		50			8	09/13/07	09/14	LSC-004
9060-07			J15HB0	3.77	0.451			100		50			8	09/13/07	09/14	LSC-004
9060-08			J15HB1	3.74	0.446			100		50			8	09/13/07	09/14	LSC-004
9060-09			J15HB4	3.64	0.461			100		50			8	09/13/07	09/14	LSC-004
9060-10			Lab Control Sample	4.38	0.400			100		50				09/13/07	09/15	LSC-004
9060-11			Method Blank	4.23	0.400			100		50				09/13/07	09/14	LSC-004
9060-12			Duplicate (R709060-06)	3.71	0.453			100		50			8	09/13/07	09/14	LSC-004
inal values and limits from method				400	0.400					25			180			

ROCEDURES REFERENCE TRITIUM_COX_LSC
CP-251 Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD FOR 12 SAMPLES
MDA 3.80 ± 0.497
YIELD 100 ± 0

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

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SAMPLE DELIVERY GROUP K0951

Test NI L Matrix SOLID
SDG 7869
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LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Nickel 63	
paration batch 6126-190						
9060-01			7869-001	J15H83	U	
9060-02			7869-002	J15H84	U	
9060-03			7869-003	J15H85	U	
9060-04			7869-004	J15H97	U	
9060-05			7869-005	J15H98	U	
9060-06			7869-006	J15H99	U	
9060-07			7869-007	J15HB0	U	
9060-08			7869-008	J15HB1	U	
9060-09			7869-009	J15HB4	U	
9060-10			7869-010	Lab Control Sample	ok	
9060-11			7869-011	Method Blank	U	
9060-12			7869-012	Duplicate (R709060-06)	-	U

inal values and limits from method RDLs (pCi/g) 30.0
-F Remain.SitesBurialGrnds-SoilFP

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

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SAMPLE DELIVERY GROUP K0951

Test NI L Matrix SOLID
SDG 7869
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LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG K0951

:THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6126-190			2σ prep error 10.0 % Reference Lab Notebook #6126, pg. 190													
9060-01			J15H83	3.05	0.500			87		50			9	09/14/07	09/15	LSC-004
9060-02			J15H84	2.99	0.500			88		50			9	09/14/07	09/15	LSC-004
9060-03			J15H85	3.00	0.500			88		50			9	09/14/07	09/15	LSC-004
9060-04			J15H97	2.99	0.500			91		50			9	09/14/07	09/15	LSC-004
9060-05			J15H98	3.02	0.500			88		50			9	09/14/07	09/15	LSC-004
9060-06			J15H99	2.80	0.500			95		50			9	09/14/07	09/15	LSC-004
9060-07			J15HB0	2.93	0.500			91		50			9	09/14/07	09/15	LSC-004
9060-08			J15HB1	2.80	0.500			95		50			9	09/14/07	09/15	LSC-004
9060-09			J15HB4	2.96	0.500			90		50			9	09/14/07	09/15	LSC-004
9060-10			Lab Control Sample	2.71	0.500			99		50				09/14/07	09/15	LSC-004
9060-11			Method Blank	2.84	0.500			96		50				09/14/07	09/15	LSC-004
9060-12			Duplicate (R709060-06)	3.07	0.500			88		50			9	09/14/07	09/15	LSC-004
inal values and limits from method				30.0	0.500			30-105		25			180			

ROCEDURES	REFERENCE	NI63_LSC
	SPP-061	Determination of Moisture Content in Solid Samples rev 0
	SPP-060	Soil Preparation, rev 0
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-280	Nickel-63 Purification, rev 3

AVERAGES ± 2 SD	MDA	2.93	± 0.230
FOR 12 SAMPLES	YIELD	91	± 8

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/19/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0951

SDG	7869
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG_K0951

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	Hanford
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	09/19/07

SDG 7869
Contact Melissa C. Mannion

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Client Hanford
Contract No. 630
Case no SDG_K0951

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.

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Form DVD-RG
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Contract No. 630
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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.

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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).

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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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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.

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
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Report date 09/19/07

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Case no SDG_K0951

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.

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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.

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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.

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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 Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/19/07

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.

SDG 7869
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0951

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 Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/19/07

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-032-154	Page 3 of 3

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH	Price Code STB	Data Turnaround 7DAY
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:12 BCL Soil/Verification K0951 (7869)		SAF No. RC-032		
Ice Chest No. ERC-02-404	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A070433		Bill of Lading/Air Bill No. See OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	None	None	None	None					
Type of Container	P	P	P	P	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	500mL	125mL	125mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	Gross Alpha; Gross Beta					
Sample No. / Matrix * / Sample Date / Sample Time											
J15H83 / SOIL / 9-6-07 / 0800			X	X	X	X					C10
J15H84 / SOIL / ↓ / 0820			X	X	X	X					C1
J15H85 / SOIL / ↓ / 0840			X	X	X	X					C2

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From T. Welch-Koelling 9-6-07 1230	Date/Time	Received By/Stored In RT Coffman / RT Coffman 9/6/07
Relinquished By/Removed From RT Coffman / RT COFFMAN 9/6/07	Date/Time 1430	Received By/Stored In KM Singleton 9-6-07
Relinquished By/Removed From KM Singleton 9-10-07 1500	Date/Time CCA	Received By/Stored In FED EX
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In 09/11/07 09:30
Relinquished By/Removed From	Date/Time	Received By/Stored In
Relinquished By/Removed From	Date/Time	Received By/Stored In

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Silver-108 metastable}

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-032-155	Page 1 of 2

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 7DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:12 BCL Soil Debris/Verification K0951 (7869)	SAF No. RC-032	
Ice Chest No. ERC-02-404	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070433	Bill of Lading/Air Bill No. See 05PC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	None	None	None	None					
Type of Container	P	P	P	P	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	500mL	125mL	125mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	Gross Alpha; Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
J15H97	SOIL	9-6-07	0850			X	X	X	X				A1
J15H98	SOIL		0905			X	X	X	X				A2
J15H99	SOIL		0920			X	X	X	X				A3
J15HB0	SOIL		0935			X	X	X	X				A4
J15HB1	SOIL		0950			X	X	X	X				B5

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Evelyn Facer	9/6/07 1230	RT Coffman / RT Coffman	1230 9/6/07
RT Coffman / RT Coffman	9/6/07 1430	KM Singleton	1430 9-6-07
KM Singleton	9-10-07 1500	FED EX	LUCH
FED EX		[illegible]	09/11/07 09:30

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Silver-108 metastable}

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-032-155	Page 2 of 2

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:12 BCL Soil Debris/Verification K0951 (7869)		SAF No.: RC-032
Ice Chest No.: ERC-02-404	Field Logbook No.: EFL-1174-3	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A070433		Bill of Lading/Air Bill No.: See ASPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	None	None	None	None					
Type of Container	P	P	P	P	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	500mL	125mL	125mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	Gross Alpha; Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
~~J15HB2~~	~~SOIL~~					X	X	X	X				B6
~~J15HB3~~	~~SOIL~~					X	X	X	X				B6D
J15HB4	SOIL	9-6-07	1005			X	X	X	X				B7
~~J15HB5~~	~~SOIL~~					X	X	X	X				B8

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Welch-Koelling / J. Wooldridge	9-6-07 1230	RT Coffman / RT Coffman	1230 9/6/07
RT Coffman / RT Coffman	9/6/07 1430	KM Singleton	1430 9-6-07
KM Singleton	9-10-07 1500	FED EX	
FED EX		[illegible]	09/11/07 09:20

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Silver-108 metastable}

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

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

7869 k0951

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 09/11/07 9:38 CoC No. RC-032-154, 155

Container I.D. No. ERC-02-404 Requested TAT (Days) 7 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 [Y]
6. Number of samples in shipping container: 9 Sample Matrix S
7. Number of containers per sample: 4 (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 [Y]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [illegible] Date: 09/11/07 Time: 10:15

Customer Sample No.	cpm	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. _____ Calibration date _____

LIONVILLE LABORATORY INC.

21 September 2007

RECEIVED SEP 2007

Joan Kessner
WC-Hanford
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 #	0709L887
SDG #	K0951
SAF #	RC-032
Date Received	9/11/07
# Samples	9
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

RECEIVED SEP 2007

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15H83						
SILVER, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
SILVER, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
SILVER, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
MERCURY, TOTAL	001	S	07C0175	09/06/07	09/13/07	09/14/07
MERCURY, TOTAL	001 REP	S	07C0175	09/06/07	09/13/07	09/14/07
MERCURY, TOTAL	001 MS	S	07C0175	09/06/07	09/13/07	09/14/07
POTASSIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
POTASSIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
POTASSIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	001	S	07L0454	09/06/07	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	001 MS	S	07L0454	09/06/07	09/12/07	09/12/07
J15H84						
SILVER, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
MERCURY, TOTAL	002	S	07C0175	09/06/07	09/13/07	09/14/07
POTASSIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	002	S	07L0454	09/06/07	09/12/07	09/12/07
J15H85						
SILVER, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
MERCURY, TOTAL	003	S	07C0175	09/06/07	09/13/07	09/14/07
POTASSIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	003	S	07L0454	09/06/07	09/12/07	09/12/07
J15H97						
SILVER, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
MERCURY, TOTAL	004	S	07C0175	09/06/07	09/13/07	09/14/07
POTASSIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	004	S	07L0454	09/06/07	09/12/07	09/12/07
J15H98						
SILVER, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
MERCURY, TOTAL	005	S	07C0175	09/06/07	09/13/07	09/14/07
POTASSIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	005	S	07L0454	09/06/07	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15H99						
SILVER, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
MERCURY, TOTAL	006	S	07C0175	09/06/07	09/13/07	09/14/07
POTASSIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	006	S	07L0454	09/06/07	09/12/07	09/12/07
J15HB0						
SILVER, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
MERCURY, TOTAL	007	S	07C0175	09/06/07	09/13/07	09/14/07
POTASSIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	007	S	07L0454	09/06/07	09/12/07	09/12/07
J15HB1						
SILVER, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
MERCURY, TOTAL	008	S	07C0175	09/06/07	09/13/07	09/14/07
POTASSIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	008	S	07L0454	09/06/07	09/12/07	09/12/07
J15HB4						
SILVER, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
ALUMINUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
ARSENIC, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
BORON, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
BARIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
BERYLLIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
CALCIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
CADMIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
COBALT, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
CHROMIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
COPPER, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
IRON, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
MERCURY, TOTAL	009	S	07C0175	09/06/07	09/13/07	09/14/07
POTASSIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
MAGNESIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
MANGANESE, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
MOLYBDENUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
SODIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
NICKEL, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
LEAD, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
ANTIMONY, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
SELENIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
SILICON, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
VANADIUM, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07
ZINC, TOTAL	009	S	07L0454	09/06/07	09/12/07	09/12/07

LAB QC:

SILVER LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
ALUMINUM LABORTORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
ALUMINUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
ARSENIC LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
ARSENIC, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
BORON LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
BORON, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
BARIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
BARIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
BERYLLIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
BERYLLIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
CALCIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
CALCIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
CADMIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
CADMIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
COBALT LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
COBALT, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
CHROMIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
CHROMIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
COPPER LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
COPPER, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
IRON LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
IRON, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
MERCURY LABORATORY	LC1 BS	S	07C0175	N/A	09/13/07	09/14/07
MERCURY, TOTAL	MB1	S	07C0175	N/A	09/13/07	09/14/07
POTASSIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
POTASSIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
MAGNESIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
MAGNESIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
MANGANESE LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
MANGANESE, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
MOLYBDENUM LABORATOR	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
MOLYBDENUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
SODIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
SODIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
NICKEL LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
NICKEL, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
LEAD LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
ANTIMONY LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
ANTIMONY, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
SELENIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
SELENIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
SILICON LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
SILICON, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
VANADIUM LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
VANADIUM, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07
ZINC LABORATORY	LC1 BS	S	07L0454	N/A	09/12/07	09/12/07
ZINC, TOTAL	MB1	S	07L0454	N/A	09/12/07	09/12/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032
LVL#: 0709L887
SDG/SAF#: K0951/RC-032

W.O.#: 11343-606-001-9999-00
Date Received: 09-11-07

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) 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 9 soil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were reported with 3-fold dilutions for ICP metals due to sample matrix.

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

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

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

6. The preparation/method blanks for 2 analytes were outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a). The MB results for Sodium and Zinc were greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and samples J15H84 and J15H85 for Sodium, and all samples except for samples J15H98, J15H99, and J15HB0 for Zinc, read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 32 pages.

8. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of Mercury at 123.4%. Refer to the Inorganics Laboratory Control Standards Report. The LCS for Mercury was within the Performance Acceptance Limits of 1.91-3.70 mg/kg, set by the manufacturer, at 3.46 mg/kg

9. The matrix spike (MS) recoveries for 4 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. 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
J15H83	Aluminum	66,000	96.3
	Iron	66,000	117.4
	Antimony	300	94.8
	Silicon	6,300	91.4

11. The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

13. LvLI is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/18/07
Date

jjw/m09-887

LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within th

Lot#: 07091887

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: __3005A __3010A __3015 __3020A X3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X6010B		__200.7				__99
Antimony	X6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X6010B		__200.7				__99
Beryllium	X6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	X6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X6010B		__200.7				__99
Copper	X6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X6010B		__200.7				__99
Manganese	X6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X6010B		__200.7				__99
Nickel	X6010B		__200.7				__99
Potassium	X6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X6010B		__200.7				__99
Zinc	X6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951

LVL LOT #: 07D9L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J15H83	Silver, Total	0.27 u	MG/KG	0.27	3.0
		Aluminum, Total	5600	MG/KG	5.0	3.0
		Arsenic, Total	3.2	MG/KG	1.2	3.0
		Boron, Total	1.3	MG/KG	1.1	3.0
		Barium, Total	55.8	MG/KG	0.06	3.0
		Beryllium, Total	0.04	MG/KG	0.03	3.0
		Calcium, Total	4410	MG/KG	2.1	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	5.6	MG/KG	0.24	3.0
		Chromium, Total	8.3	MG/KG	0.30	3.0
		Copper, Total	12.1	MG/KG	0.27	3.0
		Iron, Total	13900	MG/KG	7.1	3.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	954	MG/KG	9.5	3.0
		Magnesium, Total	3550	MG/KG	2.4	3.0
		Manganese, Total	244	MG/KG	0.21	3.0
		Molybdenum, Total	0.48 u	MG/KG	0.48	3.0
		Sodium, Total	216	MG/KG	2.1	3.0
		Nickel, Total	9.6	MG/KG	0.81	3.0
		Lead, Total	5.8	MG/KG	0.98	3.0
		Antimony, Total	0.66 u	MG/KG	0.66	3.0
		Selenium, Total	1.3 u	MG/KG	1.3	3.0
		Silicon, Total	1820	MG/KG	2.6	3.0
		Vanadium, Total	32.6	MG/KG	0.24	3.0
		Zinc, Total	32.1	MG/KG	0.12	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J15H84	Silver, Total	0.26 u	MG/KG	0.26	3.0
		Aluminum, Total	5350	MG/KG	4.8	3.0
		Arsenic, Total	1.8	MG/KG	1.2	3.0
		Boron, Total	1.9	MG/KG	1.0	3.0
		Barium, Total	50.5	MG/KG	0.06	3.0
		Beryllium, Total	0.03	MG/KG	0.03	3.0
		Calcium, Total	4540	MG/KG	2.0	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	5.7	MG/KG	0.23	3.0
		Chromium, Total	9.3	MG/KG	0.29	3.0
		Copper, Total	12.5	MG/KG	0.26	3.0
		Iron, Total	13800	MG/KG	6.9	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	874	MG/KG	9.2	3.0
		Magnesium, Total	3570	MG/KG	2.3	3.0
		Manganese, Total	238	MG/KG	0.20	3.0
		Molybdenum, Total	0.46 u	MG/KG	0.46	3.0
		Sodium, Total	162	MG/KG	2.0	3.0
		Nickel, Total	9.8	MG/KG	0.77	3.0
		Lead, Total	4.0	MG/KG	0.95	3.0
		Antimony, Total	0.63 u	MG/KG	0.63	3.0
		Selenium, Total	1.2 u	MG/KG	1.2	3.0
		Silicon, Total	1050	MG/KG	2.5	3.0
		Vanadium, Total	33.7	MG/KG	0.23	3.0
		Zinc, Total	30.9	MG/KG	0.11	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J15H85	Silver, Total	0.27 u	MG/KG	0.27	3.0
		Aluminum, Total	4610	MG/KG	5.0	3.0
		Arsenic, Total	2.7	MG/KG	1.2	3.0
		Boron, Total	2.1	MG/KG	1.1	3.0
		Barium, Total	49.6	MG/KG	0.06	3.0
		Beryllium, Total	0.11	MG/KG	0.03	3.0
		Calcium, Total	4070	MG/KG	2.1	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	4.8	MG/KG	0.24	3.0
		Chromium, Total	8.2	MG/KG	0.30	3.0
		Copper, Total	9.8	MG/KG	0.27	3.0
		Iron, Total	12200	MG/KG	7.1	3.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	750	MG/KG	9.5	3.0
		Magnesium, Total	2880	MG/KG	2.4	3.0
		Manganese, Total	221	MG/KG	0.21	3.0
		Molybdenum, Total	0.48 u	MG/KG	0.48	3.0
		Sodium, Total	169	MG/KG	2.1	3.0
		Nickel, Total	8.7	MG/KG	0.81	3.0
		Lead, Total	4.0	MG/KG	0.98	3.0
		Antimony, Total	0.66 u	MG/KG	0.66	3.0
		Selenium, Total	1.3 u	MG/KG	1.3	3.0
		Silicon, Total	582	MG/KG	2.6	3.0
		Vanadium, Total	28.8	MG/KG	0.24	3.0
		Zinc, Total	25.5	MG/KG	0.12	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J15H97	Silver, Total	0.26 u	MG/KG	0.26	3.0
		Aluminum, Total	6000	MG/KG	4.9	3.0
		Arsenic, Total	2.7	MG/KG	1.2	3.0
		Boron, Total	1.3	MG/KG	1.1	3.0
		Barium, Total	46.7	MG/KG	0.06	3.0
		Beryllium, Total	0.03	MG/KG	0.03	3.0
		Calcium, Total	4780	MG/KG	2.1	3.0
		Cadmium, Total	0.17	MG/KG	0.15	3.0
		Cobalt, Total	5.7	MG/KG	0.23	3.0
		Chromium, Total	10.1	MG/KG	0.29	3.0
		Copper, Total	11.9	MG/KG	0.26	3.0
		Iron, Total	15000	MG/KG	7.0	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	860	MG/KG	9.4	3.0
		Magnesium, Total	3770	MG/KG	2.4	3.0
		Manganese, Total	242	MG/KG	0.21	3.0
		Molybdenum, Total	0.47 u	MG/KG	0.47	3.0
		Sodium, Total	190	MG/KG	2.1	3.0
		Nickel, Total	10.0	MG/KG	0.79	3.0
		Lead, Total	5.4	MG/KG	0.97	3.0
		Antimony, Total	0.64 u	MG/KG	0.64	3.0
		Selenium, Total	1.3 u	MG/KG	1.3	3.0
		Silicon, Total	706	MG/KG	2.5	3.0
		Vanadium, Total	34.9	MG/KG	0.23	3.0
		Zinc, Total	33.6	MG/KG	0.12	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/17/07

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WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J15H98	Silver, Total	0.26 u	MG/KG	0.26	3.0
		Aluminum, Total	6270	MG/KG	4.8	3.0
		Arsenic, Total	4.4	MG/KG	1.2	3.0
		Boron, Total	2.2	MG/KG	1.0	3.0
		Barium, Total	60.7	MG/KG	0.06	3.0
		Beryllium, Total	0.03 u	MG/KG	0.03	3.0
		Calcium, Total	7640	MG/KG	2.1	3.0
		Cadmium, Total	0.19	MG/KG	0.14	3.0
		Cobalt, Total	5.9	MG/KG	0.23	3.0
		Chromium, Total	10.8	MG/KG	0.29	3.0
		Copper, Total	14.2	MG/KG	0.26	3.0
		Iron, Total	16000	MG/KG	6.9	3.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	938	MG/KG	9.3	3.0
		Magnesium, Total	4160	MG/KG	2.3	3.0
		Manganese, Total	253	MG/KG	0.20	3.0
		Molybdenum, Total	0.46 u	MG/KG	0.46	3.0
		Sodium, Total	208	MG/KG	2.0	3.0
		Nickel, Total	11.0	MG/KG	0.78	3.0
		Lead, Total	6.7	MG/KG	0.96	3.0
		Antimony, Total	0.64 u	MG/KG	0.64	3.0
		Selenium, Total	1.2 u	MG/KG	1.2	3.0
		Silicon, Total	689	MG/KG	2.5	3.0
		Vanadium, Total	37.3	MG/KG	0.23	3.0
		Zinc, Total	50.5	MG/KG	0.12	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J15H99	Silver, Total	0.26 u	MG/KG	0.26	3.0
		Aluminum, Total	5290	MG/KG	4.7	3.0
		Arsenic, Total	2.6	MG/KG	1.2	3.0
		Boron, Total	2.1	MG/KG	1.0	3.0
		Barium, Total	61.7	MG/KG	0.06	3.0
		Beryllium, Total	0.03 u	MG/KG	0.03	3.0
		Calcium, Total	4900	MG/KG	2.0	3.0
		Cadmium, Total	0.17	MG/KG	0.14	3.0
		Cobalt, Total	5.3	MG/KG	0.23	3.0
		Chromium, Total	9.6	MG/KG	0.28	3.0
		Copper, Total	12.7	MG/KG	0.26	3.0
		Iron, Total	14300	MG/KG	6.8	3.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	850	MG/KG	9.1	3.0
		Magnesium, Total	3440	MG/KG	2.3	3.0
		Manganese, Total	251	MG/KG	0.20	3.0
		Molybdenum, Total	0.45 u	MG/KG	0.45	3.0
		Sodium, Total	182	MG/KG	2.0	3.0
		Nickel, Total	9.2	MG/KG	0.77	3.0
		Lead, Total	5.7	MG/KG	0.94	3.0
		Antimony, Total	0.63 u	MG/KG	0.63	3.0
		Selenium, Total	1.2 u	MG/KG	1.2	3.0
		Silicon, Total	525	MG/KG	2.4	3.0
		Vanadium, Total	33.4	MG/KG	0.23	3.0
		Zinc, Total	40.3	MG/KG	0.11	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J15HB0	Silver, Total	0.25 u	MG/KG	0.25	3.0
		Aluminum, Total	7120	MG/KG	4.6	3.0
		Arsenic, Total	3.4	MG/KG	1.1	3.0
		Boron, Total	2.4	MG/KG	1.0	3.0
		Barium, Total	73.4	MG/KG	0.06	3.0
		Beryllium, Total	0.03 u	MG/KG	0.03	3.0
		Calcium, Total	5200	MG/KG	2.0	3.0
		Cadmium, Total	0.19	MG/KG	0.14	3.0
		Cobalt, Total	6.5	MG/KG	0.22	3.0
		Chromium, Total	11.8	MG/KG	0.28	3.0
		Copper, Total	12.7	MG/KG	0.25	3.0
		Iron, Total	17800	MG/KG	6.7	3.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	1140	MG/KG	8.9	3.0
		Magnesium, Total	4270	MG/KG	2.3	3.0
		Manganese, Total	274	MG/KG	0.20	3.0
		Molybdenum, Total	0.45 u	MG/KG	0.45	3.0
		Sodium, Total	252	MG/KG	2.0	3.0
		Nickel, Total	11.4	MG/KG	0.75	3.0
		Lead, Total	9.1	MG/KG	0.92	3.0
		Antimony, Total	0.61 u	MG/KG	0.61	3.0
		Selenium, Total	1.2 u	MG/KG	1.2	3.0
		Silicon, Total	819	MG/KG	2.4	3.0
		Vanadium, Total	40.0	MG/KG	0.22	3.0
		Zinc, Total	41.7	MG/KG	0.11	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 KC951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	J15HB1	Silver, Total	0.26 u	MG/KG	0.26	3.0
		Aluminum, Total	5050	MG/KG	4.8	3.0
		Arsenic, Total	2.7	MG/KG	1.2	3.0
		Boron, Total	3.5	MG/KG	1.0	3.0
		Barium, Total	71.9	MG/KG	0.06	3.0
		Beryllium, Total	0.03 u	MG/KG	0.03	3.0
		Calcium, Total	5620	MG/KG	2.1	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	5.4	MG/KG	0.23	3.0
		Chromium, Total	7.7	MG/KG	0.29	3.0
		Copper, Total	13.5	MG/KG	0.26	3.0
		Iron, Total	12600	MG/KG	6.9	3.0
		Mercury, Total	0.04	MG/KG	0.02	1.0
		Potassium, Total	768	MG/KG	9.3	3.0
		Magnesium, Total	3350	MG/KG	2.3	3.0
		Manganese, Total	222	MG/KG	0.20	3.0
		Molybdenum, Total	0.58	MG/KG	0.46	3.0
		Sodium, Total	207	MG/KG	2.0	3.0
		Nickel, Total	8.6	MG/KG	0.78	3.0
		Lead, Total	4.6	MG/KG	0.95	3.0
		Antimony, Total	0.64 u	MG/KG	0.64	3.0
		Selenium, Total	1.2 u	MG/KG	1.2	3.0
		Silicon, Total	2980	MG/KG	2.5	3.0
		Vanadium, Total	29.9	MG/KG	0.23	3.0
		Zinc, Total	33.2	MG/KG	0.12	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	J15HB4	Silver, Total	0.27 u	MG/KG	0.27	3.0
		Aluminum, Total	5990	MG/KG	4.9	3.0
		Arsenic, Total	2.3	MG/KG	1.2	3.0
		Boron, Total	3.7	MG/KG	1.1	3.0
		Barium, Total	82.4	MG/KG	0.06	3.0
		Beryllium, Total	0.03 u	MG/KG	0.03	3.0
		Calcium, Total	5970	MG/KG	2.1	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	5.9	MG/KG	0.24	3.0
		Chromium, Total	9.6	MG/KG	0.30	3.0
		Copper, Total	13.6	MG/KG	0.27	3.0
		Iron, Total	15700	MG/KG	7.1	3.0
		Mercury, Total	0.08	MG/KG	0.01	1.0
		Potassium, Total	944	MG/KG	9.5	3.0
		Magnesium, Total	3830	MG/KG	2.4	3.0
		Manganese, Total	247	MG/KG	0.21	3.0
		Molybdenum, Total	0.59	MG/KG	0.47	3.0
		Sodium, Total	237	MG/KG	2.1	3.0
		Nickel, Total	10.1	MG/KG	0.80	3.0
		Lead, Total	6.5	MG/KG	0.98	3.0
		Antimony, Total	0.65 u	MG/KG	0.65	3.0
		Selenium, Total	1.3 u	MG/KG	1.3	3.0
		Silicon, Total	1090	MG/KG	2.5	3.0
		Vanadium, Total	35.8	MG/KG	0.24	3.0
		Zinc, Total	37.4	MG/KG	0.12	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	07L0454-MB1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	1.6 u	MG/KG	1.6	1.0
		Arsenic, Total	0.39 u	MG/KG	0.39	1.0
		Boron, Total	0.34 u	MG/KG	0.34	1.0
		Barium, Total	0.03	MG/KG	0.02	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Calcium, Total	12.2	MG/KG	0.68	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.08 u	MG/KG	0.08	1.0
		Chromium, Total	0.1	MG/KG	0.1	1.0
		Copper, Total	0.26	MG/KG	0.09	1.0
		Iron, Total	2.3 u	MG/KG	2.3	1.0
		Potassium, Total	3.0 u	MG/KG	3.0	1.0
		Magnesium, Total	1.1	MG/KG	0.77	1.0
		Manganese, Total	0.07 u	MG/KG	0.07	1.0
		Molybdenum, Total	0.15 u	MG/KG	0.15	1.0
		Sodium, Total	8.6	MG/KG	0.67	1.0
		Nickel, Total	0.26 u	MG/KG	0.26	1.0
		Lead, Total	0.31 u	MG/KG	0.31	1.0
		Antimony, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.41 u	MG/KG	0.41	1.0
		Silicon, Total	0.82 u	MG/KG	0.82	1.0
		Vanadium, Total	0.11	MG/KG	0.08	1.0
		Zinc, Total	2.0	MG/KG	0.04	1.0
BLANK1	07C0175-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J15H83	Silver, Total	4.6	0.27u	5.0	92.0	3.0
		Aluminum, Total	6260	5600	199	333.6*	3.0
		Arsenic, Total	180	3.2	199	88.9	3.0
		Boron, Total	92.0	1.3	99.4	91.2	3.0
		Barium, Total	237	55.8	199	91.0	3.0
		Beryllium, Total	4.6	0.04	5.0	91.1	3.0
		Calcium, Total	6980	4410	2480	103.5	3.0
		Cadmium, Total	4.7	0.15u	5.0	94.0	3.0
		Cobalt, Total	51.5	5.6	49.7	92.4	3.0
		Chromium, Total	26.6	8.3	19.9	92.0	3.0
		Copper, Total	35.1	12.1	24.8	92.7	3.0
		Iron, Total	14200	13900	99.4	217.1*	3.0
		Mercury, Total	0.18	0.02u	0.16	114.0	1.0
		Potassium, Total	3130	954	2480	87.5	3.0
		Magnesium, Total	5910	3550	2480	95.3	3.0
		Manganese, Total	292	244	49.7	95.8*	3.0
		Molybdenum, Total	87.4	0.48u	99.4	87.9	3.0
		Sodium, Total	2530	216	2480	93.1	3.0
		Nickel, Total	54.6	9.6	49.7	90.5	3.0
		Lead, Total	49.7	5.8	49.7	88.3	3.0
		Antimony, Total	33.6	0.66u	49.7	67.6	3.0
		Selenium, Total	154	1.3 u	199	77.3	3.0
		Silicon, Total	1180	1820	99.4	-650. *	3.0
		Vanadium, Total	78.3	32.6	49.7	92.0	3.0
		Zinc, Total	78.4	32.1	49.7	93.2	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J15H83	Silver, Total	0.27u	0.27u	NC	3.0
		Aluminum, Total	5600	5500	1.9	3.0
		Arsenic, Total	3.2	3.3	3.1	3.0
		Boron, Total	1.3	1.9	37.5	3.0
		Barium, Total	55.8	56.6	1.4	3.0
		Beryllium, Total	0.04	0.03u	~~NC~~ 200	3.0
		Calcium, Total	4410	4750	7.4	3.0
		Cadmium, Total	0.15u	0.15u	NC	3.0
		Cobalt, Total	5.6	5.9	5.2	3.0
		Chromium, Total	8.3	8.2	1.2	3.0
		Copper, Total	12.1	14.1	15.3	3.0
		Iron, Total	13900	14400	3.5	3.0
		Mercury, Total	0.02u	0.01u	NC	1.0
		Potassium, Total	954	857	10.6	3.0
		Magnesium, Total	3550	3610	1.7	3.0
		Manganese, Total	244	248	1.9	3.0
		Molybdenum, Total	0.48u	0.48u	NC	3.0
		Sodium, Total	216	220	2.2	3.0
		Nickel, Total	9.6	9.8	2.1	3.0
		Lead, Total	5.8	9.7	50.3	3.0
		Antimony, Total	0.66u	0.66u	NC	3.0
		Selenium, Total	1.3 u	1.3 u	NC	3.0
		Silicon, Total	1820	1530	17.2	3.0
		Vanadium, Total	32.6	32.4	0.62	3.0
		Zinc, Total	32.1	43.6	30.4	3.0

corrected value MW 9/18/07

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/17/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	07L0454-LC1	Silver, LCS	44.1	47.6	MG/KG	92.6
		Aluminum, LCS	429	476	MG/KG	90.2
		Arsenic, LCS	828	952	MG/KG	87.0
		Boron, LCS	427	476	MG/KG	89.7
		Barium, LCS	432	476	MG/KG	90.7
		Beryllium, LCS	22.1	23.8	MG/KG	92.9
		Calcium, LCS	2210	2380	MG/KG	93.0
		Cadmium, LCS	22.3	23.8	MG/KG	93.7
		Cobalt, LCS	227	238	MG/KG	95.3
		Chromium, LCS	44.5	47.6	MG/KG	93.5
		Copper, LCS	107	119	MG/KG	90.2
		Iron, LCS	458	476	MG/KG	96.2
		Potassium, LCS	2110	2380	MG/KG	88.5
		Magnesium, LCS	2150	2380	MG/KG	90.5
		Manganese, LCS	66.9	71.4	MG/KG	93.7
		Molybdenum, LCS	433	476	MG/KG	91.0
		Sodium, LCS	2160	2380	MG/KG	90.6
		Nickel, LCS	176	190	MG/KG	92.7
		Lead, LCS	219	238	MG/KG	91.8
		Antimony, LCS	251	286	MG/KG	87.8
		Selenium, LCS	788	952	MG/KG	82.8
		Silicon, LCS	418	476	MG/KG	87.9
		Vanadium, LCS	223	238	MG/KG	93.9
		Zinc, LCS	89.7	95.2	MG/KG	94.2
LCS1	07C0175-LC1	Mercury, LCS	3.5	2.8	MG/KG	123.4

Lionville Laboratory Use Only

07091887

Custody Transfer Record/Lab Work Request

Page 1 of 1 See SR

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client TNU Hanford RC-032

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager Arlette Johnson

QC SW846 Del STD TAT 3 days

Date Rec'd 9.11.07 Date Due 9-14-07

		A	B
Refrigerator #		3	2
#/Type Container	Liquid		
	Solid	1pl/1gl	1pl
Volume		250	125
Preservatives		—	—
ANALYSES REQUESTED →	ORGANIC: VOA		
	BNA		
	Pest/PCB		
	Herb		
	INORG: Metal + Hg		
	CN		
	Cr+6		
Lionville Laboratory Use Only		Met①	ICP6

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Met①	ICP6
001	J15H83			S	9.6.07	0800	X	X
002	J15H84					0820	X	X
003	J15H85					0840	X	X
004	J15H97					0850	X	X
005	J15H98					0905	X	X
006	J15H99					0920	X	X
007	J15HB0					0935	X	X
008	J15HB1					0950	X	X
009	J15HB4					1005	X	X

Special Instructions:

Met① = HSL + B, Mo, Si, (No Tl)

Special Instructions:

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

Run matrix QC

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9.11.07	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-154	Page 1 of 1

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8D	Data Turnaround: 7DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:12 BCL Soil/Verification		SAF No.: RC-032
Ice Chest No.: AFS-04-012	Field Logbook No.: EFL-1174-3	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / MONVILLE	Offsite Property No.: A070409		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	None	None	None	None					
Type of Container	P	P	P	P	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	500mL	125mL	125mL	125mL					
SAMPLE ANALYSIS	See items (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	Gross Alpha; Gross Beta					
Sample No. / Matrix * / Sample Date / Sample Time											
J15H83 / SOIL / 9-6-07 / 0800	X	X									C10
J15H84 / SOIL / " / 0820	X	X									C1
J15H85 / SOIL / " / 0840	X	X									C2
	~~X~~	~~X~~									
	~~X~~	~~X~~									

16-07

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Toni Welch-Koelling	9-6-07 1230	RT Coffman / RT Coffman	1230 9/6/07
RT Coffman / RT Coffman	9/6/07 1430	BM Singleton	1430 9-6-07
BM Singleton	9-10-07 1500 WCH	FED EX	
FED EX	9-11-07 1040	D. Mack	9-11-07 1040

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

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

00000029

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-155	Page 1 of 2

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B 8E 8H 8-16-07	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:12 BCL Soil Debris/Verification		SAF No.: RC-032
Ice Chest No.: AFS-04-012	Field Logbook No.: EFL-1174-3	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A070409		Bill of Lading/Air Bill No.: See OSRC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	None	None	None	None					
Type of Container	JPA 4oz	P	P	P	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	500mL	125mL	125mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 – Total Sr	Gross Alpha; Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
J15H97	SOIL	9-6-07	0850	X	X								A1
J15H98	SOIL		0905	X	X								A2
J15H99	SOIL		0920	X	X								A3
J15HB0	SOIL		0935	X	X								A4
J15HB1	SOIL		0950	X	X								B5

JPA 8-16-07

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Welch-Koelling	9/6/07 1230	RT COFFMAN / RT Coffman	1230 9/6/07
RT COFFMAN / RT Coffman	9/6/07 1430	KM Singleton	1430 9-6-07
KM Singleton	9/7/07 WCH 1500	FED EX	
FED EX	9.11.07 / 0940	[illegible]	9.11.07 / 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

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

000000030

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-155	Page 2 of 2

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 7DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:12 BCL Soil Debris/Verification		SAF No. RC-032
Ice Chest No. AFS-09-012	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070409		Bill of Lading/Air Bill No. SEE OSRC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	None	None	None	None					
Type of Container	P	P	P	P	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	500mL	125mL	125mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 – Total Sr	Gross Alpha; Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
~~J15HB2~~	~~SOIL~~			X	X	X							B6
~~J15HB3~~	SOIL			X	X								B6D
J15HB4	SOIL	9-6-07	1005	X	X								B7
~~J15HB5~~	~~SOIL~~			X	X								B8

8-16-07

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	9/6/07 1230	RT Coffman / RT Coffman	1230 9/6/07
RT Coffman / RT Coffman	1430 9/6/07	[signature]	1430 9-6-07
KM Singleton / [signature]	WCH 9-10-07 1500	FED EX	
[signature]	9-11-07 0940	[signature]	9-11-07 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Silver-108 metastable}

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

000000031

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford RC.032 Date: 9-11-07

Project/SAF/SOW/Release #:

LvLI Batch #: 07091887 Sample Custodian: D. Yonich

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7924 1471 294
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received chilled or ambient?	Temp 2.3	°C	Cooler # AFS-04-012
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 & LvLI) 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 LvLI 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 _____

LvLI

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

RECEIVED SEP 2007

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15H83						
% SOLIDS	001	S	07L%SA12	09/06/07	09/12/07	09/12/07
CHROMIUM VI	001	S	07LVI074	09/06/07	09/12/07	09/12/07
CHROMIUM VI	001 REP	S	07LVI074	09/06/07	09/12/07	09/12/07
CHROMIUM VI	001 MS	S	07LVI074	09/06/07	09/12/07	09/12/07
CHROMIUM VI	001 MSD	S	07LVI074	09/06/07	09/12/07	09/12/07
J15H84						
% SOLIDS	002	S	07L%SA12	09/06/07	09/12/07	09/12/07
CHROMIUM VI	002	S	07LVI074	09/06/07	09/12/07	09/12/07
J15H85						
% SOLIDS	003	S	07L%SA12	09/06/07	09/12/07	09/12/07
CHROMIUM VI	003	S	07LVI074	09/06/07	09/12/07	09/12/07
J15H97						
% SOLIDS	004	S	07L%SA12	09/06/07	09/12/07	09/12/07
CHROMIUM VI	004	S	07LVI074	09/06/07	09/12/07	09/12/07
J15H98						
% SOLIDS	005	S	07L%SA12	09/06/07	09/12/07	09/12/07
CHROMIUM VI	005	S	07LVI074	09/06/07	09/12/07	09/12/07
J15H99						
% SOLIDS	006	S	07L%SA12	09/06/07	09/12/07	09/12/07
CHROMIUM VI	006	S	07LVI074	09/06/07	09/12/07	09/12/07
J15HB0						
% SOLIDS	007	S	07L%SA12	09/06/07	09/12/07	09/12/07
CHROMIUM VI	007	S	07LVI074	09/06/07	09/12/07	09/12/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0951

DATE RECEIVED: 09/11/07 LVL LOT # :0709L887

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15HB1						
% SOLIDS	008	S	07L%SA12	09/06/07	09/12/07	09/12/07
CHROMIUM VI	008	S	07LVI074	09/06/07	09/12/07	09/12/07
J15HB4						
% SOLIDS	009	S	07L%SA12	09/06/07	09/12/07	09/12/07
% SOLIDS	009 REP	S	07L%SA12	09/06/07	09/12/07	09/12/07
CHROMIUM VI	009	S	07LVI074	09/06/07	09/12/07	09/12/07
LAB QC:						
CHROMIUM VI	MB1	S	07LVI074	N/A	09/12/07	09/12/07
CHROMIUM VI	MB1 BS	S	07LVI074	N/A	09/12/07	09/12/07
CHROMIUM VI	MB1 BSD	S	07LVI074	N/A	09/12/07	09/12/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032 K0951
LVL#: 0709L887

W.O.#: 11343-606-001-9999-00
Date Received: 09-11-07

INORGANIC NARRATIVE

1. This narrative covers the analyses of 9 soil samples.

2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.

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

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.

5. The method blank for Chromium VI was within the method criteria.

6. The Laboratory Control Samples (LCS) for Chromium VI were within the laboratory control limits.

7. The matrix spike recoveries for Chromium VI were within the 75-125% control limits.

8. The replicate analyses for Chromium VI and Percent Solids were within the 20% Relative Percent Difference (RPD) control limit.

9. Results for solid samples are reported on a dry weight basis.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/18/07
Date

njp\i09-887

The results presented in this report relate to the analytical testing and conditions of the samples upon 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 14 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	✓ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		✓ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		__ 9010B	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		__ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/14/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J15H83	% Solids	99.6	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-002	J15H84	% Solids	99.6	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-003	J15H85	% Solids	99.6	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-004	J15H97	% Solids	99.4	%	0.01	1.0
		Chromium VI	0.28	MG/KG	0.20	1.0
-005	J15H98	% Solids	99.5	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-006	J15H99	% Solids	99.6	%	0.01	1.0
		Chromium VI	0.28	MG/KG	0.20	1.0
-007	J15HB0	% Solids	99.7	%	0.01	1.0
		Chromium VI	0.33	MG/KG	0.20	1.0
-008	J15HB1	% Solids	99.7	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-009	J15HB4	% Solids	99.5	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/14/07

CLIENT: TNUHANFORD RC-032 K0951

LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	07LVI074-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/14/07

CLIENT: TNUHANFORD RC-032 K0951 LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE:	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J15H83	Soluble Chromium VI	3.9	0.20u	4.0	100.0	1.0
		Insoluble Chromium VI	1110	0.20u	1220	90.8	100
BLANK10	07LVI074-MB1	Soluble Chromium VI	4.0	0.20u	4.0	100.1	1.0
		Insoluble Chromium VI	1210	0.20u	1170	103.6	100

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/14/07

CLIENT: TNUHANFORD RC-032 K0951

LVL LOT #: 0709L887

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001REP	J15H83	Chromium VI	0.20u	0.20u	NC	1.0
-009REP	J15HB4	% Solids	99.5	99.4	0.060	1.0

Lionville Laboratory Use Only

07091887

Custody Transfer Record/Lab Work Request

Page 1 of 1 See SR

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford RC-032

Est. Final Proj. Sampling Date:

Project#: 11343-606-001-9999-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SW846 Del: STO TAT: 3 days

Date Rec'd: 9-11-07 Date Due: 9-14-07

Refrigerator #								A 3		B 2					
#/Type Container	Liquid							1pl	1pl	1pl					
	Solid														
Volume								250		125					
Preservatives								—		—					
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal + Hg	CN	Cr+6					
Lionville Laboratory Use Only								MetO		ICP6					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected															
001	J15H83			S	9-6-07	0800							X		X						
002	J15H84					0820							X		X						
003	J15H85					0840							X		X						
004	J15H97					0850							X		X						
005	J15H98					0905							X		X						
006	J15H99					0920							X		X						
007	J15HB0					0935							X		X						
008	J15HB1					0950							X		X						
009	J15HB4					1005							X		X						

Special Instructions:

MetO = HSL + B, Mo, Si, (No Tl)

Special Instructions:

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

Run matrix QC

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	9-11-07	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-154	Page 1 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8D	Data Turnaround: 7DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:12 BCL Soil/Verification		SAF No.: RC-032
Ice Chest No.: AFS-04-012	Field Logbook No.: EFL-1174-3	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A070409		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	None	None	None	None					
Type of Container	P	P	P	P	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	500mL	125mL	125mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 – Total Sr	Gross Alpha; Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
J15H83	SOIL	9-6-07	0800	X	X								C10
J15H84	SOIL	↓	0820	X	X								C1
J15H85	SOIL	↓	0840	X	X								C2
				~~X~~	~~X~~								
				~~X~~	~~X~~								

9-10-07

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Toni Welch-Koelling	9-6-07 1230	RT Coffman / RT Coffman	1230 9/6/07
RT Coffman / RT Coffman	9/6/07 1430	Bill Singleton	1430 9-6-07
Bill Singleton	9-10-07 1500 WCH	FED EX	
	9-11-07 1040		9-11-07 1040
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 - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

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

0000000011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-155	Page 1 of 2

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B 8-16-07	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:12 BCL Soil Debris/Verification	SAF No.: RC-032	
Ice Chest No.: AFS-04-012	Field Logbook No.: EFL-1174-3	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A070409	Bill of Lading/Air Bill No.: See OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	None	None	None	None					
Type of Container	P	P	P	P	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	500mL	125mL	125mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	Gross Alpha: Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
J15H97	SOIL	9-6-07	0850	X	X								A1
J15H98	SOIL		0905	X	X								A2
J15H99	SOIL		0920	X	X								A3
J15HB0	SOIL		0935	X	X								A4
J15HB1	SOIL		0950	X	X								A5

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: T. Welch-Koelling	9/6/07 1230	RT COFFMAN / RT Coffman	1230 9/6/07
Relinquished By/Removed From: RT COFFMAN / RT Coffman	9/6/07 1430	Received By/Stored In: KM Singleton	1430 9-6-07
Relinquished By/Removed From: KM Singleton	WCH 97007 1500	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX	9.11.07 / 0940	Received By/Stored In: J. Thach	9.11.07 / 0940
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

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

000000012

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-155	Page 2 of 2

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:12 BCL Soil Debris/Verification		SAF No.: RC-032
Ice Chest No.: AFS-09-012	Field Logbook No.: EFL-1174-3	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A070409		Bill of Lading/Air Bill No.: See OSRC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	None	None	None	None					
Type of Container	P	P	P	P	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	500mL	125mL	125mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	Gross Alpha; Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
~~J15HB2~~	~~SOIL~~			X	X	X							B6
~~J15HB3~~	SOIL			X	X								B6D
J15HB4	SOIL	9-6-07	1005	X	X								B7
~~J15HB5~~	~~SOIL~~			X	X								B8

8-16-07

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Welch-Koelling	9/6/07 1230	RT Coffman / RT Coffman	9/6/07 1230
RT Coffman / RT Coffman	9/6/07 1430	KM Singleton	9-6-07 1430
KM Singleton	9-10-07 1500	FEDEX	
FedEx	9-11-07 0940	N. Smith	9-11-07 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

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 Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU. Hanford RC.032 Date: 9.11.07

Project/SAF/SOW/Release #:

LvLI Batch #: 0709L887 Sample Custodian: D. Yonich

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier: Fed Ex		Airbill # 7924 1471 294
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.3 °C		Cooler # AFS-04.012
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 & LvLI) 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 LvLI 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 _____

LvLI