0076412

SAF-RC-033
100-F Remaining Sites Burial Grounds - Other Solid Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Randy Coffman	X9-07	KW 2/13/08 INITIAL/DATE
Kathy Wendt	H4-21	KW 2/13/08 INITIAL/DATE

COMMENTS:

SDG: K1099 SAF-RC-033

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 118-F-6 anomalies

RECEIVED
MAR 0 3 2008
EDMC

EBERLINE
SERVICES

RECEIVED
FEB 2008

February 11, 2008

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

Reference: **P.O. #630**
Eberline Services R8-02-020-7756, SDG K1099

Dear Ms. Kessner:

Enclosed is the data report for one solid (other solid) sample designated under SAF No. RC-033 received at Eberline Services on January 25, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

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
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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 K1099 was composed of one solid (other solid) sample designated under SAF No. RC-033 with a Project Designation of 100-F Remaining Sites Burial Grounds – Other Solid Quick Turn.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on February 8, 2008.

2.0 ANALYSIS NOTES

2.1 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 Mannion
Melissa C. Mannion
Senior Program Manager

02/11/08
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 K1099

SDG	7756
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K1099

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	02/08/08

SDG 7756
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1099

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 02/08/08

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 K1099

SDG 7756
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1099

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R802020-01	J168M8	118-F-6 anomalies	SOLID		RC-033	RC-033-040	01/15/08 14:15
R802020-02	Lab Control Sample		SOLID		RC-033		
R802020-03	Method Blank		SOLID		RC-033		
R802020-04	Duplicate (R802020-01)	118-F-6 anomalies	SOLID		RC-033		01/15/08 14:15

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 02/08/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1099

SDG 7756
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1099

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7756	RC-033-040	J168M8	SOLID	100.0	42.6 g		01/25/08	10	R802020-01	7756-001
		Method Blank	SOLID						R802020-03	7756-003
		Lab Control Sample	SOLID						R802020-02	7756-002
		Duplicate (R802020-01)	SOLID	100.0	42.6 g		01/25/08	10	R802020-04	7756-004

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 02/08/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1099

SDG 7756
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1099

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6133-164	15.0	1			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 02/08/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1099

SDG 7756
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1099

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R802020-01 01/15/08 01/25/08	J168M8 118-F-6 anomalies RC-033-040	RC-033	SOLID	7756-001	GAM		02/06/08	02/07/08	CSS	Gamma Scan
R802020-02	Lab Control Sample	RC-033	SOLID	7756-002	GAM		02/06/08	02/07/08	CSS	Gamma Scan
R802020-03	Method Blank	RC-033	SOLID	7756-003	GAM		02/06/08	02/07/08	CSS	Gamma Scan
R802020-04 01/15/08 01/25/08	Duplicate (R802020-01) 118-F-6 anomalies	RC-033	SOLID	7756-004	GAM		02/06/08	02/07/08	CSS	Gamma Scan

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	RC-033	Gamma Scan	GAMMA_GS	1			1	1	1	4
TOTALS				1			1	1	1	4

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 02/08/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1099

7756-003 Method Blank

METHOD BLANK

SDG	7756	Client/Case no	Hanford	SDG K1099	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802020-03	Client sample id	Method Blank		
Dept sample id	7756-003	Material/Matrix		SOLID	
		SAF No	RC-033		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	U		3.83		U	GAM
Cobalt 60	10198-40-0	U		0.127	0.050	U	GAM
Cesium 137	10045-97-3	U		0.124	0.100	U	GAM
Radium 226	13982-63-3	U		0.289	0.100	U	GAM
Radium 228	15262-20-1	U		0.610	0.200	U	GAM
Europium 152	14683-23-9	U		0.295	0.100	U	GAM
Europium 154	15585-10-1	U		0.410	0.100	U	GAM
Europium 155	14391-16-3	U		0.270	0.100	U	GAM
Thorium 228	14274-82-9	U		0.176		U	GAM
Thorium 232	TH-232	U		0.610		U	GAM
Uranium 235	15117-96-1	U		0.380		U	GAM
Uranium 238	U-238	U		15.1		U	GAM
Americium 241	14596-10-2	U		0.218		U	GAM
Silver 108m	14391-65-2	U		0.086		U	GAM
Barium 133	13981-41-4	U		0.112		U	GAM
Niobium 94	14681-63-1	U		0.106		U	GAM

100F RemainSitesBurialGrnds-OSolidQT

QC-BLANK #64563

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/08/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1099

7756-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7756
Contact Melissa C. Mannion

Client/Case no Hanford SDG K1099
Contract No. 630

Lab sample id R802020-02
Dept sample id 7756-002

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No RC-033

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
Cobalt 60	10.6	0.38	0.212	0.050		GAM	10.7	0.43	99	76-124	80-120
Cesium 137	11.5	0.33	0.224	0.100		GAM	11.2	0.45	103	76-124	80-120

100F RemainSitesBurialGrnds-OSolidQT

QC-LCS #64562

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 02/08/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1099

7756-004 J168M8

DUPLICATE

SDG	7756			Client/Case no	Hanford SDG K1099
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R802020-04	Lab sample id	R802020-01	Client sample id	J168M8
Dept sample id	7756-004	Dept sample id	7756-001	Location/Matrix	118-F-6 anomalies SOLID
		Received	01/25/08	Collected/Weight	01/15/08 14:15 42.6 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-033-040 RC-033

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
Potassium 40	9.71	1.1	0.825			GAM	9.16	1.4	1.08		6	43	0.4
Cobalt 60	U		0.072	0.050	U	GAM	U		0.115	U	-		0.6
Cesium 137	6.59	0.16	0.100	0.100		GAM	6.82	0.25	0.162		3	33	0.3
Radium 226	2.20	0.22	0.182	0.100		GAM	2.40	0.29	0.248		9	40	0.7
Radium 228	1.03	0.35	0.345	0.200		GAM	0.882	0.44	0.464		15	94	0.5
Europium 152	U		0.222	0.100	U	GAM	U		0.327	U	-		0.5
Europium 154	U		0.217	0.100	U	GAM	U		0.344	U	-		0.6
Europium 155	U		0.150	0.100	U	GAM	U		0.222	U	-		0.5
Thorium 228	0.686	0.11	0.094			GAM	0.675	0.13	0.139		2	49	0.1
Thorium 232	1.03	0.35	0.345			GAM	0.882	0.44	0.464		15	94	0.5
Uranium 235	U		0.427		U	GAM	U		0.438	U	-		0
Uranium 238	U		15.4		U	GAM	U		14.2	U	-		0.1
Americium 241	U		0.096		U	GAM	U		0.144	U	-		0.5
Silver 108m	U		0.073		U	GAM	U		0.111	U	-		0.6
Barium 133	U		0.102		U	GAM	U		0.149	U	-		0.5
Niobium 94	U		0.069		U	GAM	U		0.099	U	-		0.5

100F RemainSitesBurialGrnds-OSolidQT

QC-DUP#1 64564

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	02/08/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1099

7756-001 J168M8

DATA SHEET

SDG	7756	Client/Case no	Hanford	SDG K1099	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802020-01	Client sample id	J168M8		
Dept sample id	7756-001	Location/Matrix	118-F-6 anomalies	SOLID	
Received	01/25/08	Collected/Weight	01/15/08 14:15	42.6 g	
% solids	100.0	Custody/SAF No	RC-033-040	RC-033	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	9.16	1.4	1.08			GAM
Cobalt 60	10198-40-0	U		0.115	0.050	U	GAM
Cesium 137	10045-97-3	6.82	0.25	0.162	0.100		GAM
Radium 226	13982-63-3	2.40	0.29	0.248	0.100		GAM
Radium 228	15262-20-1	0.882	0.44	0.464	0.200		GAM
Europium 152	14683-23-9	U		0.327	0.100	U	GAM
Europium 154	15585-10-1	U		0.344	0.100	U	GAM
Europium 155	14391-16-3	U		0.222	0.100	U	GAM
Thorium 228	14274-82-9	0.675	0.13	0.139			GAM
Thorium 232	TH-232	0.882	0.44	0.464			GAM
Uranium 235	15117-96-1	U		0.438		U	GAM
Uranium 238	U-238	U		14.2		U	GAM
Americium 241	14596-10-2	U		0.144		U	GAM
Silver 108m	14391-65-2	U		0.111		U	GAM
Barium 133	13981-41-4	U		0.149		U	GAM
Niobium 94	14681-63-1	U		0.099		U	GAM

100F RemainSitesBurialGrnds-OSolidQT

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/08/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1099

Test GAM Matrix SOLID
SDG 7756
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1099

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
Preparation batch 6133-164						
R802020-01			7756-001	J168M8	U	6.82
R802020-02			7756-002	Lab Control Sample	ok	ok
R802020-03			7756-003	Method Blank	U	U
R802020-04			7756-004	Duplicate (R802020-01)	- U	ok
Nominal values and limits from method				RDLs (pCi/g)	0.050	0.100
100F RemainSitesBurialGrnds-OSolidQT						

METHOD PERFORMANCE

LAB SAMPLE 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
Preparation batch 6133-164			2σ prep error 15.0 % Reference Lab Notebook #6133, pg. 164													
R802020-01			J168M8	28.8	42.6					412			22	02/06/08	02/06	PD,01,00
R802020-02			Lab Control Sample	0.212	42.0					408				02/06/08	02/06	PD,06,00
R802020-03			Method Blank	28.6	42.0					407				02/06/08	02/06	PD,04,00
R802020-04			Duplicate (R802020-01)	19.9	42.6					917			22	02/06/08	02/06	PD,01,00
Nominal values and limits from method				0.050	42.0					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 19.4 ± 26.9
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 02/08/08

SDG 7756
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1099

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 02/08/08

SDG 7756
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1099

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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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/08/08

SDG 7756
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1099

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/08/08

SDG 7756
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1099

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).

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/08/08

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.

SDG 7756
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K1099

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/08/08

SDG 7756
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1099

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/08/08

SDG 7756
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1099

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/08/08

SDG 7756
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K1099

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/08/08

SDG 7756
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1099

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 02/08/08

SDG 7756
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K1099

MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/08/08

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'

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-033-040	Page 1 of 1

Collector T. Etherington	Company Contact R T Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 9 8G	Data Turnaround 15 DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Other Solid Quick T	Sampling Location 118-F-6 anomalies K1099 (7756)	SAF No. RC-033	
Ice Chest No. EA C-02-404	Field Logbook No. EFL-1174-4	COA R118F62000	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080159		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential RAD

Special Handling and/or Storage

NA

Preservation	None	None	NONE	1-21-08						
Type of Container	P	P	P							
No. of Container(s)	1	1	1	1-21-08						
Volume	1000mL	500mL	500 mL	1000ml						
SAMPLE ANALYSIS	See item (1) in Special Instructions. 1-15	See item (2) in Special Instructions. RCF SHIP	RCF SHIP SCREEN	1-24-08						

Sample No.	Matrix *	Sample Date	Sample Time									
~~J168M6~~	~~OTHER SOLID~~	~~1/15/08~~	~~1025~~			X						2
~~J168M7~~	~~OTHER SOLID~~		~~1525~~			X						4
J168M8	OTHER SOLID		1415		X	X						9
~~J168M9~~	~~OTHER SOLID~~		~~1410~~			X						12

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T Etherington	1-17-08 1145	RT COFFMAN / RT Coffman	1/17/08 1145
RT COFFMAN / RT Coffman	1/17/08 1630	KEFER # 1A, 3728	1/17/08 1630
KEFER #1A	1-24-08 0745	KM Singleton	1-24-08 0745
KM Singleton	1-24-08 1500 WCH	FED EX	
FED EX			01/25/08 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 - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Niobium-94, Radium-226, Silver-108 metastable}

samples from 3728 Ref # 1A.
3728 Custodian removed samples for shipping on 1/24/08.
Sampler unavailable to relinquish

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

RICHMOND, CA LABORATORY

EBERLINE

SAMPLE RECEIPT CHECKLIST

Client: W.C. HANFORD City: RICHLAND State: WA

Date/Time received: 01/25/08 09:30 COC No: RC-033-040, 042

Container ID No: ERC-02-404 Requested TAT (Days): 15 Received by: NC

INSPECTION

- Custody seal on shipping container intact? Yes X No ___ N/A ___
- Custody seal on shipping container dated & signed? Yes X No ___ N/A ___
- Custody seal on sample container intact? Yes X No ___ N/A ___
- Custody seal on sample container dated & signed? Yes X No ___ N/A ___
- Packing material: N/A ___ Dry X
- Number of samples in shipping container: 2 Sample Matrix: X
- Number of containers per sample: ___ Seal: X
- Samples are in correct container? Yes X No ___
- Paperwork agrees with samples? Yes X No ___
- Samples have: Tape ___ Hazard label ___ Rad label ___ Appropriate sample labels: X
- Samples are: In good condition X Leaking ___ Broken Container ___ Missing ___
- Samples are: Preserved ___ Not preserved ___ By ___ Preservative ___
- Describe any anomalies:

- Was PM notified of any anomalies? Yes ___ No ___ Date ___
- Inspected by: [illegible] Date 01/25/08 Time 10:00

Customer Sample No	Beta/Gamma cpm	Alpha cpm	Alpha mRem	Wipe	Customer Sample No	Beta/Gamma cpm	Alpha cpm	Alpha mRem	Wipe
All samples < 60									

Ion Chamber Ser. No: ___ Calibration date: ___

Alpha Meter Ser. No: ___ Calibration date: ___

Beta/Gamma Meter Ser. No: 100482 Calibration date: 09MAY07

Form SOP-QC-07-30-07

over 55 years of quality nuclear service

LIONVILLE LABORATORY INC.

6 February 2008

RECEIVED FEB 2008

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 #	0801L498
SDG #	K1099
SAF #	RC-033
Date Received	1/25/08
# Samples	11
Matrix	SOIL
Volatiles	X
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	

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

RECEIVED
FEB 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :08011498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J168M6						
SILVER, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
SILVER, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
SILVER, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	002	SO	08C0019	01/15/08	01/31/08	02/01/08
POTASSIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
POTASSIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
POTASSIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
SODIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/31/08
SODIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/31/08
SODIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/31/08
NICKEL, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	002	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	002 REP	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	002 MS	SO	08L0043	01/15/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J168M7						
SILVER, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	003	SO	08C0019	01/15/08	01/31/08	02/01/08
MERCURY, TOTAL	003 REP	SO	08C0019	01/15/08	01/31/08	01/31/08
MERCURY, TOTAL	003 MS	SO	08C0019	01/15/08	01/31/08	01/31/08
POTASSIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
SODIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	003	SO	08L0043	01/15/08	01/30/08	01/30/08
J168M8						
SILVER, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	004	SO	08C0019	01/15/08	01/31/08	01/31/08
POTASSIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
SODIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	004	SO	08L0043	01/15/08	01/30/08	01/30/08
J168M9						
SILVER, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	005	SO	08C0019	01/15/08	01/31/08	01/31/08
POTASSIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
SODIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	005	SO	08L0043	01/15/08	01/30/08	01/30/08
J168N0						
SILVER, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	006	SO	08C0019	01/15/08	01/31/08	01/31/08
POTASSIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
SODIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	006	SO	08L0043	01/15/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J168N1						
SILVER, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	007	SO	08C0019	01/15/08	01/31/08	01/31/08
POTASSIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
SODIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	007	SO	08L0043	01/15/08	01/30/08	01/30/08
J168N2						
SILVER, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	008	SO	08C0019	01/15/08	01/31/08	01/31/08
POTASSIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
SODIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	008	SO	08L0043	01/15/08	01/30/08	01/30/08
J168N3						
SILVER, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	009	SO	08C0019	01/15/08	01/31/08	01/31/08
POTASSIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	009	SO	08L0043	01/15/08	01/30/08	01/30/08
J168N4						
SILVER, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
ALUMINUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	010	SO	08C0019	01/15/08	01/31/08	01/31/08
POTASSIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
SODIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	010	SO	08L0043	01/15/08	01/30/08	01/30/08
J168N5						
SILVER, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ALUMINUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
ARSENIC, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
BORON, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
BARIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
CALCIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
CADMIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
COBALT, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
CHROMIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
COPPER, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
IRON, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
MERCURY, TOTAL	011	SO	08C0019	01/15/08	01/31/08	01/31/08
POTASSIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
MANGANESE, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
SODIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
NICKEL, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
LEAD, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
ANTIMONY, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
SELENIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
SILICON, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
VANADIUM, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08
ZINC, TOTAL	011	SO	08L0043	01/15/08	01/30/08	01/30/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
SILVER, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
ALUMINUM LABORTORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
ALUMINUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
ARSENIC LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
ARSENIC, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
BORON LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
BORON, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
BARIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
BARIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
CALCIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
CALCIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
CADMIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
CADMIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
COBALT LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
COBALT, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
CHROMIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
CHROMIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
COPPER LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
COPPER, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
IRON LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
IRON, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
MERCURY LABORATORY	LC1 BS	S	08C0019	N/A	01/31/08	01/31/08
MERCURY, TOTAL	MB1	S	08C0019	N/A	01/31/08	01/31/08
POTASSIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
POTASSIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
MAGNESIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
MANGANESE LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
MANGANESE, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
MOLYBDENUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
SODIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
SODIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
NICKEL LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
NICKEL, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
LEAD LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
LEAD, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
ANTIMONY LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
ANTIMONY, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
SELENIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
SELENIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
SILICON LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
SILICON, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
VANADIUM LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08
VANADIUM, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08
ZINC LABORATORY	LC1 BS	S	08L0043	N/A	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT # :0801L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	MB1	S	08L0043	N/A	01/30/08	01/30/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-033
LVL#: 0801L498
SDG/SAF#: K1099/RC-033

W.O.#: 11343-606-001-9999-00
Date Received: 01-25-08

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 10 solid samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples are reported on a wet weight, 'as-received' basis.

   The samples were reported with 3-fold dilutions for ICP metals due to sample matrix. Sample J168M6 was rerun with a 12-fold dilution for Sodium, and with a 10-fold dilution for Mercury, due to high concentrations.

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 LOQ).

6. The preparation/method blank for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a). The MB result for Sodium was greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} and only samples J168N3 and J168N5 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.

8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the

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 42 pages.

Inorganics Laboratory Control Standards Report.

9. The matrix spike (MS) recoveries for 12 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
J168M6	Aluminum	36,000	109.9
	Barium	300	104.1
	Calcium	66,000	102.4
	Copper	300	107.5
	Iron	66,000	106.2
	Potassium	6,000	134.8
	Magnesium	4,800	108.2
	Manganese	9,000	104.3
	Sodium	180,000	97.3
	Silicon	6,300	98.0
	Vanadium	3,000	101.6
	Zinc	300	101.7

11. The duplicate analyses for 15 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 Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) 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.

Judy Stone

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

2/5/08
Date

jjw/m01-506

LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: 0801L498

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A X 3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X 6010B		__200.7				__99
Antimony	X 6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X 6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X 6010B		__200.7				__99
Beryllium	X 6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	X 6010B		__200.7				__99
Cadmium	X 6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X 6010B		__200.7				__99
Chromium	X 6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X 6010B		__200.7				__99
Copper	X 6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X 6010B		__200.7				__99
Lead	X 6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X 6010B		__200.7				__99
Manganese	X 6010B		__200.7				__99
Mercury	__7470A [3]	X 7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X 6010B		__200.7				__99
Nickel	X 6010B		__200.7				__99
Potassium	X 6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X 6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X 6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X 6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X 6010B	__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	X 6010B		__200.7				__99
Zinc	X 6010B		__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 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J168M6	Silver, Total	0.27 u	MG/KG	0.27	3.0
		Aluminum, Total	391	MG/KG	10.8	3.0
		Arsenic, Total	1.4 u	MG/KG	1.4	3.0
		Boron, Total	1.4 u	MG/KG	1.4	3.0
		Barium, Total	5.5	MG/KG	0.27	3.0
		Beryllium, Total	0.14 u	MG/KG	0.14	3.0
		Calcium, Total	389	MG/KG	10.8	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	0.58	MG/KG	0.54	3.0
		Chromium, Total	0.69	MG/KG	0.54	3.0
		Copper, Total	0.83	MG/KG	0.54	3.0
		Iron, Total	952	MG/KG	12.2	3.0
		Mercury, Total	11.0	MG/KG	0.09	10.0
		Potassium, Total	143	MG/KG	10.8	3.0
		Magnesium, Total	255	MG/KG	6.8	3.0
		Manganese, Total	20.6	MG/KG	0.11	3.0
		Molybdenum, Total	0.81 u	MG/KG	0.81	3.0
		Sodium, Total	62600	MG/KG	21.6	12.0
		Nickel, Total	0.96	MG/KG	0.54	3.0
		Lead, Total	0.81 u	MG/KG	0.81	3.0
		Antimony, Total	0.81 u	MG/KG	0.81	3.0
		Selenium, Total	1.6 u	MG/KG	1.6	3.0
		Silicon, Total	585	MG/KG	10.8	3.0
		Vanadium, Total	1.9	MG/KG	0.38	3.0
		Zinc, Total	5.3	MG/KG	1.6	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099

LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J168M7	Silver, Total	0.24 u	MG/KG	0.24	3.0
		Aluminum, Total	4740	MG/KG	9.8	3.0
		Arsenic, Total	4.1	MG/KG	1.2	3.0
		Boron, Total	26.2	MG/KG	1.2	3.0
		Barium, Total	71.2	MG/KG	0.24	3.0
		Beryllium, Total	0.30	MG/KG	0.12	3.0
		Calcium, Total	5280	MG/KG	9.8	3.0
		Cadmium, Total	2.1	MG/KG	0.12	3.0
		Cobalt, Total	2.0	MG/KG	0.49	3.0
		Chromium, Total	16.2	MG/KG	0.49	3.0
		Copper, Total	13.2	MG/KG	0.49	3.0
		Iron, Total	8910	MG/KG	11.0	3.0
		Mercury, Total	0.04	MG/KG	0.009	1.0
		Potassium, Total	2100	MG/KG	9.8	3.0
		Magnesium, Total	3500	MG/KG	6.1	3.0
		Manganese, Total	49.0	MG/KG	0.1	3.0
		Molybdenum, Total	12.3	MG/KG	0.73	3.0
		Sodium, Total	3550	MG/KG	4.9	3.0
		Nickel, Total	26.3	MG/KG	0.49	3.0
		Lead, Total	1.7	MG/KG	0.73	3.0
		Antimony, Total	0.73 u	MG/KG	0.73	3.0
		Selenium, Total	3.2	MG/KG	1.5	3.0
		Silicon, Total	1920	MG/KG	9.8	3.0
		Vanadium, Total	22.7	MG/KG	0.34	3.0
		Zinc, Total	44.8	MG/KG	1.5	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J168M8	Silver, Total	0.35	MG/KG	0.25	3.0
		Aluminum, Total	2650	MG/KG	10	3.0
		Arsenic, Total	3.8	MG/KG	1.2	3.0
		Boron, Total	17.6	MG/KG	1.2	3.0
		Barium, Total	54.0	MG/KG	0.25	3.0
		Beryllium, Total	0.26	MG/KG	0.12	3.0
		Calcium, Total	10600	MG/KG	10	3.0
		Cadmium, Total	2.3	MG/KG	0.12	3.0
		Cobalt, Total	1.7	MG/KG	0.50	3.0
		Chromium, Total	9.0	MG/KG	0.50	3.0
		Copper, Total	8.5	MG/KG	0.50	3.0
		Iron, Total	6700	MG/KG	11.2	3.0
		Mercury, Total	0.10	MG/KG	0.009	1.0
		Potassium, Total	1170	MG/KG	10	3.0
		Magnesium, Total	5950	MG/KG	6.2	3.0
		Manganese, Total	51.1	MG/KG	0.1	3.0
		Molybdenum, Total	15.1	MG/KG	0.75	3.0
		Sodium, Total	1820	MG/KG	5.0	3.0
		Nickel, Total	25.7	MG/KG	0.50	3.0
		Lead, Total	1.1	MG/KG	0.75	3.0
		Antimony, Total	0.75 u	MG/KG	0.75	3.0
		Selenium, Total	2.6	MG/KG	1.5	3.0
		Silicon, Total	1340	MG/KG	10	3.0
		Vanadium, Total	17.2	MG/KG	0.35	3.0
		Zinc, Total	37.5	MG/KG	1.5	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J168M9	Silver, Total	0.26 u	MG/KG	0.26	3.0
		Aluminum, Total	6940	MG/KG	10.4	3.0
		Arsenic, Total	4.5	MG/KG	1.3	3.0
		Boron, Total	40.9	MG/KG	1.3	3.0
		Barium, Total	79.6	MG/KG	0.26	3.0
		Beryllium, Total	0.45	MG/KG	0.13	3.0
		Calcium, Total	6760	MG/KG	10.4	3.0
		Cadmium, Total	2.6	MG/KG	0.13	3.0
		Cobalt, Total	3.6	MG/KG	0.52	3.0
		Chromium, Total	25.5	MG/KG	0.52	3.0
		Copper, Total	18.3	MG/KG	0.52	3.0
		Iron, Total	12100	MG/KG	11.7	3.0
		Mercury, Total	0.06	MG/KG	0.008	1.0
		Potassium, Total	2600	MG/KG	10.4	3.0
		Magnesium, Total	4560	MG/KG	6.5	3.0
		Manganese, Total	83.9	MG/KG	0.10	3.0
		Molybdenum, Total	14.3	MG/KG	0.78	3.0
		Sodium, Total	3810	MG/KG	5.2	3.0
		Nickel, Total	37.8	MG/KG	0.52	3.0
		Lead, Total	2.7	MG/KG	0.78	3.0
		Antimony, Total	0.78 u	MG/KG	0.78	3.0
		Selenium, Total	2.4	MG/KG	1.6	3.0
		Silicon, Total	2260	MG/KG	10.4	3.0
		Vanadium, Total	35.5	MG/KG	0.37	3.0
		Zinc, Total	72.9	MG/KG	1.6	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J168N0	Silver, Total	0.28 u	MG/KG	0.28	3.0
		Aluminum, Total	670	MG/KG	11.3	3.0
		Arsenic, Total	1.4 u	MG/KG	1.4	3.0
		Boron, Total	14.4	MG/KG	1.4	3.0
		Barium, Total	84.8	MG/KG	0.28	3.0
		Beryllium, Total	0.14 u	MG/KG	0.14	3.0
		Calcium, Total	8410	MG/KG	11.3	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	0.74	MG/KG	0.57	3.0
		Chromium, Total	0.97	MG/KG	0.57	3.0
		Copper, Total	8.5	MG/KG	0.57	3.0
		Iron, Total	1100	MG/KG	12.7	3.0
		Mercury, Total	0.04	MG/KG	0.01	1.0
		Potassium, Total	15500	MG/KG	11.3	3.0
		Magnesium, Total	1710	MG/KG	7.1	3.0
		Manganese, Total	631	MG/KG	0.11	3.0
		Molybdenum, Total	0.85 u	MG/KG	0.85	3.0
		Sodium, Total	294	MG/KG	5.7	3.0
		Nickel, Total	2.9	MG/KG	0.57	3.0
		Lead, Total	4.8	MG/KG	0.85	3.0
		Antimony, Total	0.85 u	MG/KG	0.85	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	994	MG/KG	11.3	3.0
		Vanadium, Total	2.5	MG/KG	0.40	3.0
		Zinc, Total	59.4	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J168N1	Silver, Total	0.25 u	MG/KG	0.25	3.0
		Aluminum, Total	6150	MG/KG	10.1	3.0
		Arsenic, Total	5.8	MG/KG	1.3	3.0
		Boron, Total	40.2	MG/KG	1.3	3.0
		Barium, Total	72.9	MG/KG	0.25	3.0
		Beryllium, Total	0.39	MG/KG	0.13	3.0
		Calcium, Total	8880	MG/KG	10.1	3.0
		Cadmium, Total	1.8	MG/KG	0.13	3.0
		Cobalt, Total	2.7	MG/KG	0.50	3.0
		Chromium, Total	18.9	MG/KG	0.50	3.0
		Copper, Total	16.0	MG/KG	0.50	3.0
		Iron, Total	10800	MG/KG	11.3	3.0
		Mercury, Total	0.09	MG/KG	0.009	1.0
		Potassium, Total	3120	MG/KG	10.1	3.0
		Magnesium, Total	3970	MG/KG	6.3	3.0
		Manganese, Total	59.3	MG/KG	0.10	3.0
		Molybdenum, Total	25.3	MG/KG	0.76	3.0
		Sodium, Total	4650	MG/KG	5.0	3.0
		Nickel, Total	34.6	MG/KG	0.50	3.0
		Lead, Total	2.4	MG/KG	0.76	3.0
		Antimony, Total	0.76 u	MG/KG	0.76	3.0
		Selenium, Total	9.8	MG/KG	1.5	3.0
		Silicon, Total	1810	MG/KG	10.1	3.0
		Vanadium, Total	30.6	MG/KG	0.35	3.0
		Zinc, Total	57.1	MG/KG	1.5	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	J168N2	Silver, Total	0.27 u	MG/KG	0.27	3.0
		Aluminum, Total	5370	MG/KG	10.9	3.0
		Arsenic, Total	4.3	MG/KG	1.4	3.0
		Boron, Total	55.1	MG/KG	1.4	3.0
		Barium, Total	81.3	MG/KG	0.27	3.0
		Beryllium, Total	0.36	MG/KG	0.14	3.0
		Calcium, Total	13300	MG/KG	10.9	3.0
		Cadmium, Total	4.3	MG/KG	0.14	3.0
		Cobalt, Total	4.4	MG/KG	0.55	3.0
		Chromium, Total	23.0	MG/KG	0.55	3.0
		Copper, Total	15.7	MG/KG	0.55	3.0
		Iron, Total	8930	MG/KG	12.3	3.0
		Mercury, Total	0.03	MG/KG	0.009	1.0
		Potassium, Total	2200	MG/KG	10.9	3.0
		Magnesium, Total	5900	MG/KG	6.8	3.0
		Manganese, Total	64.9	MG/KG	0.11	3.0
		Molybdenum, Total	11.8	MG/KG	0.82	3.0
		Sodium, Total	3510	MG/KG	5.5	3.0
		Nickel, Total	35.1	MG/KG	0.55	3.0
		Lead, Total	15.9	MG/KG	0.82	3.0
		Antimony, Total	0.82 u	MG/KG	0.82	3.0
		Selenium, Total	8.0	MG/KG	1.6	3.0
		Silicon, Total	1790	MG/KG	10.9	3.0
		Vanadium, Total	27.1	MG/KG	0.38	3.0
		Zinc, Total	91.6	MG/KG	1.6	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	J168N3	Silver, Total	0.29 u	MG/KG	0.29	3.0
		Aluminum, Total	742	MG/KG	11.4	3.0
		Arsenic, Total	1.4 u	MG/KG	1.4	3.0
		Boron, Total	1.4 u	MG/KG	1.4	3.0
		Barium, Total	11.4	MG/KG	0.29	3.0
		Beryllium, Total	0.14 u	MG/KG	0.14	3.0
		Calcium, Total	683	MG/KG	11.4	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	3.7	MG/KG	0.57	3.0
		Chromium, Total	1.0	MG/KG	0.57	3.0
		Copper, Total	1.8	MG/KG	0.57	3.0
		Iron, Total	2740	MG/KG	12.9	3.0
		Mercury, Total	0.05	MG/KG	0.009	1.0
		Potassium, Total	230	MG/KG	11.4	3.0
		Magnesium, Total	490	MG/KG	7.1	3.0
		Manganese, Total	38.4	MG/KG	0.11	3.0
		Molybdenum, Total	0.86 u	MG/KG	0.86	3.0
		Sodium, Total	79.5	MG/KG	5.7	3.0
		Nickel, Total	1.2	MG/KG	0.57	3.0
		Lead, Total	0.94	MG/KG	0.86	3.0
		Antimony, Total	0.86 u	MG/KG	0.86	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	904	MG/KG	11.4	3.0
		Vanadium, Total	7.4	MG/KG	0.40	3.0
		Zinc, Total	14.7	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-010	J168N4	Silver, Total	0.29 u	MG/KG	0.29	3.0
		Aluminum, Total	4770	MG/KG	11.8	3.0
		Arsenic, Total	3.7	MG/KG	1.5	3.0
		Boron, Total	42.9	MG/KG	1.5	3.0
		Barium, Total	88.5	MG/KG	0.29	3.0
		Beryllium, Total	0.34	MG/KG	0.15	3.0
		Calcium, Total	15700	MG/KG	11.8	3.0
		Cadmium, Total	3.1	MG/KG	0.15	3.0
		Cobalt, Total	2.1	MG/KG	0.59	3.0
		Chromium, Total	21.5	MG/KG	0.59	3.0
		Copper, Total	13.8	MG/KG	0.59	3.0
		Iron, Total	9490	MG/KG	13.2	3.0
		Mercury, Total	0.03	MG/KG	0.009	1.0
		Potassium, Total	1980	MG/KG	11.8	3.0
		Magnesium, Total	9040	MG/KG	7.4	3.0
		Manganese, Total	100	MG/KG	0.12	3.0
		Molybdenum, Total	13.2	MG/KG	0.88	3.0
		Sodium, Total	3270	MG/KG	5.9	3.0
		Nickel, Total	33.0	MG/KG	0.59	3.0
		Lead, Total	8.8	MG/KG	0.88	3.0
		Antimony, Total	0.88 u	MG/KG	0.88	3.0
		Selenium, Total	4.0	MG/KG	1.8	3.0
		Silicon, Total	2060	MG/KG	11.8	3.0
		Vanadium, Total	27.6	MG/KG	0.41	3.0
		Zinc, Total	80.6	MG/KG	1.8	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-011	J168N5	Silver, Total	0.24 u	MG/KG	0.24	3.0
		Aluminum, Total	3920	MG/KG	9.8	3.0
		Arsenic, Total	1.2 u	MG/KG	1.2	3.0
		Boron, Total	1.2 u	MG/KG	1.2	3.0
		Barium, Total	55.2	MG/KG	0.24	3.0
		Beryllium, Total	0.50	MG/KG	0.12	3.0
		Calcium, Total	3130	MG/KG	9.8	3.0
		Cadmium, Total	0.12 u	MG/KG	0.12	3.0
		Cobalt, Total	8.3	MG/KG	0.49	3.0
		Chromium, Total	5.1	MG/KG	0.49	3.0
		Copper, Total	9.5	MG/KG	0.49	3.0
		Iron, Total	14500	MG/KG	11.0	3.0
		Mercury, Total	0.008u	MG/KG	0.008	1.0
		Potassium, Total	886	MG/KG	9.8	3.0
		Magnesium, Total	3000	MG/KG	6.1	3.0
		Manganese, Total	246	MG/KG	0.1	3.0
		Molybdenum, Total	0.73 u	MG/KG	0.73	3.0
		Sodium, Total	137	MG/KG	4.9	3.0
		Nickel, Total	7.5	MG/KG	0.49	3.0
		Lead, Total	9.2	MG/KG	0.73	3.0
		Antimony, Total	0.73 u	MG/KG	0.73	3.0
		Selenium, Total	1.5 u	MG/KG	1.5	3.0
		Silicon, Total	2480	MG/KG	9.8	3.0
		Vanadium, Total	33.5	MG/KG	0.34	3.0
		Zinc, Total	47.5	MG/KG	1.5	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0043-MB1	Silver, Total	0.1	u	MG/KG	0.1	1.0
		Aluminum, Total	3.8	u	MG/KG	3.8	1.0
		Arsenic, Total	0.48	u	MG/KG	0.48	1.0
		Boron, Total	0.48	u	MG/KG	0.48	1.0
		Barium, Total	0.1	u	MG/KG	0.1	1.0
		Beryllium, Total	0.05	u	MG/KG	0.05	1.0
		Calcium, Total	9.8		MG/KG	3.8	1.0
		Cadmium, Total	0.05	u	MG/KG	0.05	1.0
		Cobalt, Total	0.19	u	MG/KG	0.19	1.0
		Chromium, Total	0.19	u	MG/KG	0.19	1.0
		Copper, Total	0.19	u	MG/KG	0.19	1.0
		Iron, Total	4.3	u	MG/KG	4.3	1.0
		Potassium, Total	3.8	u	MG/KG	3.8	1.0
		Magnesium, Total	2.4	u	MG/KG	2.4	1.0
		Manganese, Total	0.04		MG/KG	0.04	1.0
		Molybdenum, Total	0.29	u	MG/KG	0.29	1.0
		Sodium, Total	10.3		MG/KG	1.9	1.0
		Nickel, Total	0.19	u	MG/KG	0.19	1.0
		Lead, Total	0.29	u	MG/KG	0.29	1.0
		Antimony, Total	0.29	u	MG/KG	0.29	1.0
		Selenium, Total	0.58	u	MG/KG	0.58	1.0
		Silicon, Total	3.8	u	MG/KG	3.8	1.0
		Vanadium, Total	0.13	u	MG/KG	0.13	1.0
		Zinc, Total	1.9		MG/KG	0.58	1.0
BLANK1	08C0019-MB1	Mercury, Total	0.01	u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J168M6	Silver, Total	4.1	0.27u	4.5	91.1	3.0
		Aluminum, Total	3530	391	180	1743	3.0
		Arsenic, Total	168	1.4 u	180	93.1	3.0
		Boron, Total	85.5	1.4 u	90.1	94.9	3.0
		Barium, Total	242	5.5	180	131.4	3.0
		Beryllium, Total	4.4	0.14u	4.5	97.8	3.0
		Calcium, Total	20600	389	2250	897.7	3.0
		Cadmium, Total	5.3	0.14u	4.5	117.8	3.0
		Cobalt, Total	46.2	0.58	45.0	101.4	3.0
		Chromium, Total	21.5	0.69	18.0	115.6	3.0
		Copper, Total	30.7	0.83	22.5	132.8	3.0
		Iron, Total	9080	952	90.1	9015 *	3.0
		Potassium, Total	3010	143	2250	127.4	3.0
		Magnesium, Total	12900	255	2250	563.0	3.0
		Manganese, Total	215	20.6	45.0	432.0	3.0
		Molybdenum, Total	80.7	0.81u	90.1	89.6	3.0
		Sodium, Total	22300	62600	2250	-1800. *	12.0
		Nickel, Total	48.6	0.96	45.0	105.9	3.0
		Lead, Total	47.6	0.81u	45.0	105.8	3.0
		Antimony, Total	37.6	0.81u	45.0	83.6	3.0
		Selenium, Total	145	1.6 u	180	80.5	3.0
		Silicon, Total	2420	585	90.1	2042 *	3.0
		Vanadium, Total	63.5	1.9	45.0	136.9	3.0
		Zinc, Total	72.1	5.3	45.0	148.4	3.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099

LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-003	J168M7	Mercury, Total	0.18	0.04	0.14	102.8	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J168M6	Silver, Total	0.27u	0.27u	NC	3.0
		Aluminum, Total	391	1640	123.0	3.0
		Arsenic, Total	1.4 u	1.4 u	NC	3.0
		Boron, Total	1.4 u	1.4 u	NC	3.0
		Barium, Total	5.5	14.6	90.5	3.0
		Beryllium, Total	0.14u	0.14u	NC	3.0
		Calcium, Total	389	1090	94.8	3.0
		Cadmium, Total	0.14u	0.14u	NC	3.0
		Cobalt, Total	0.58	1.9	106.6	3.0
		Chromium, Total	0.69	2.3	107.8	3.0
		Copper, Total	0.83	3.5	123.3	3.0
		Iron, Total	952	3680	117.8	3.0
		Potassium, Total	143	394	93.3	3.0
		Magnesium, Total	255	984	117.7	3.0
		Manganese, Total	20.6	66.3	105.2	3.0
		Molybdenum, Total	0.81u	0.81u	NC	3.0
		Sodium, Total	62600	52300	18.0	12.0
		Nickel, Total	0.96	2.9	100.5	3.0
		Lead, Total	0.81u	2.8	~~NC~~ 200	3.0
		Antimony, Total	0.81u	0.81u	NC	3.0
		Selenium, Total	1.6 u	1.6 u	NC	3.0
		Silicon, Total	585	1810	102.3	3.0
		Vanadium, Total	1.9	8.2	124.8	3.0
		Zinc, Total	5.3	15.2	96.6	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-003REP	J168M7	Mercury, Total	0.04	0.04	17.7	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/04/08

CLIENT: TNUHANFORD RC-033 K1099 LVL LOT #: 0801L498

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0043-LC1	Silver, LCS	47.0	50.0	MG/KG	94.0
		Aluminum, LCS	482	500	MG/KG	96.5
		Arsenic, LCS	898	1000	MG/KG	89.8
		Boron, LCS	457	500	MG/KG	91.3
		Barium, LCS	476	500	MG/KG	95.2
		Beryllium, LCS	24.1	25.0	MG/KG	96.4
		Calcium, LCS	2410	2500	MG/KG	96.2
		Cadmium, LCS	23.6	25.0	MG/KG	94.4
		Cobalt, LCS	240	250	MG/KG	95.8
		Chromium, LCS	48.0	50.0	MG/KG	96.0
		Copper, LCS	122	125	MG/KG	97.5
		Iron, LCS	492	500	MG/KG	98.5
		Potassium, LCS	2400	2500	MG/KG	96.0
		Magnesium, LCS	2330	2500	MG/KG	93.2
		Manganese, LCS	72.8	75.0	MG/KG	97.1
		Molybdenum, LCS	460	500	MG/KG	92.1
		Sodium, LCS	2360	2500	MG/KG	94.4
		Nickel, LCS	191	200	MG/KG	95.5
		Lead, LCS	239	250	MG/KG	95.5
		Antimony, LCS	276	300	MG/KG	92.1
		Selenium, LCS	836	1000	MG/KG	83.6
		Silicon, LCS	445	500	MG/KG	89.0
		Vanadium, LCS	236	250	MG/KG	94.4
		Zinc, LCS	94.9	100	MG/KG	94.9
LCS1	08C0019-LC1	Mercury, LCS	4.7	4.7	MG/KG	100.3

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MERCURY PREPARATION

Logbook # 0324

yst: TCB
e: 1/31/08 recalculated
Time/Temp: 1545 / 97°
Time/Temp: 1445 / 97°

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

Prep Batch: 08C0019
Worksheet: HG013101/09/HG020101
OP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	HR			10mL	50mL	
0.2 µg/L	NB	0.100				
1.0	508	0.500				
2.0	WN	1.000				
5.0	74	2.500				
10.0	IV	5.000				
ICV	CT	0.125	2.5			
CCV	205	0.250	5.0			
ICB/CCB	28					% SOL
MB1	G12			0.30		PBS1/19 100.00
LCS1	H5	*	*	0.30		LCSS1/19
0801L497-001	3C			0.31		100.00
002	154			0.39		98.34
003	401			0.32		97.44
003R	NR			0.36		
003S	AB	0.500	1.0	0.32		
0801L498-002	A94			0.33		100.00
003	2I			0.35		R
003R	1C			0.31		
003S	CM	0.500	1.0	0.35		
004	P18			0.34		
005	532			0.37		
006	522			0.31		
007	55			0.33		
008	8H			0.33		
009	X8			0.34		
010	500			0.32		

ndard:	ID	Prep Date/Time
LMS	RI 6072-75-07B	1/31/08 1130
/CCV/LCS	US 6072-75-08A	

Reviewed By/Date: [signature] 2/4/08

see book # 9368 for std traceability information

LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg *
logue #1RM-021, Lot # E021

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

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MERCURY PREPARATION

Logbook # 0324

yst: CEB
1131/08
Time/Temp: see page
Time/Temp: 187

Instrument ID HG3.1
Balance #: B25 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0019
Worksheet: HG013101/09 | HG020101
OP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0801L498-011	H			0.36	50mL	R 100.00
0801L499-001	AH			0.33		
001R	R			0.36		
001S	AP	0.050	10.0	0.33		
0801L504-001	P3			0.31		R 97.58
001R	DLN			0.35		
001S	814	0.500	1.0	0.31		
0801L505-001	H3			0.35		96.03
001R	PT			0.32		
001S	KX	0.500	1.0	0.35		
0801L506-001	L53			0.35		100.00
001R	A901			0.41		
001S	A4	0.500	1.0	0.35		
002	* ~~478~~ 297			* ~~0.35~~ 0.35		*tube broke R
003	C48			0.33		
004	CB2			0.35		

CEB 11/31/08

Standard:	ID	Prep Date/Time
ALMS		
MCCV/LCS	see page 187	

Reviewed By/Date: 2/4/08

see book # 9328 for std traceability information

ALCS =US Metals in soil No.3: True Value = 4.70 mg/Kg
Logue #1RM-021, Lot # E021

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

HgCVAA-Prep1007

Page #:

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0043
Date/Time Initiated: 113008 10:30AM (circle)
Date/Time Completed: 113008 1:00PM
Analyst(s): MW/KMM
Matrix: Soil Water Other: solid
Instr. Type: AA ICP
Parameters: See backlog

Digested / Undigested (circle one)
Balance #: 1320
Balance Cal Verif: Y NA
Hot Plate Temp: 920

Method: SW 3005A, 3010A, 3015, 3020A, 7060A (As/Se), 7760A (Ag), 3050B, 3051
DW 200.7 (1994), 200.9, 3113B
MCAWW 200.7 (1982), 200 (AA), 206.2 (As/Se)
SM 3030C (NC)
CLP ILMO3.0, ILMO4.0
Other Teflon

TNW

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
08C1448-002		1.119	100ml	N/A	TO	Not Fine	white solid soil	glass	lil
-002B		1.119							
-002S	1.0mL	1.119							
-003		1.239					brown solids		
-004		1.209					white solid		
-005		1.159							
-006		1.029					black solid soil		
-007		1.199					white solid		
-008		1.109							
-009		1.059							
-010		1.097							
-011		1.239					brown solid soil		
08L0043-MB1		1.049				N/A	[illegible]	N/A	
-01	1.0mL	1g							

113008

HNO

Spiking IDs:
MS #: 8100-04-01
-02
-03
0077-077 -01
LCS #: -02
-03
-04
-05

Reagent IDs:
HNO_3 E7A071
HCL E4CC60
H_2O_2 E7A403
1:1 HNO_3 9784-070-06
1:1 HCL

File ID#: IC004301
LIMS Transfer: Y N
Data Review By/Date: update pmp, 02/01/08

Lionville Laboratory Use Only

801L 498

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000035

nt TNU HANFORD SAF# RC-033

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

ville Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 15 days

e Rec'd 1-25-08 Date Due 2-9-08

		A	B
Refrigerator #		6	2
#/Type Container	Liquid		
	Solid	16	1P
Volume		4	4/500
Preservatives			
ANALYSES REQUESTED →	ORGANIC: VOA		
	ORGANIC: BNA		
	ORGANIC: Pest/PCB		
	ORGANIC: Herb		
	INORG: Total Metal		Met ①
	INORG: Hg		
	INORG: CN		
Lionville Laboratory Use Only		0624H	

RIX
ES:
Soil
Sediment
Solid
Sludge
Water
Oil
Air
Drum Solids
Drum Liquids
EP/TCLP
Leachate
Wipe
Other
Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	Total Metal	Hg	CN
001	J168M5			So	1-15-08	1005	X						
002	M6					1025					/		
003	M7					1325					/		
004	M8					1415					/		
005	M9					1440					/		
006	N0					1335					/		
007	N1					1345					/		
008	N2					1355					/		
009	N3					1405					/		
010	N4					1425					/		

ecial Instructions:

met ① = HSL + B, Mo, Si
(NOTL)

Special Instructions:

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

Relinquished by	Received by	Date	Time
D. Ep	[signature]	1-25-08	0930

Relinquished by	Received by	Date	Time

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

'8016448

nt TNU HANFORD SAF# RC033

Final Proj. Sampling Date

ect# See Pg 1

ect Contact/Phone#

nville Laboratory Project Manager O. J.

Del TAT

e Rec'd Date Due

Refrigerator #									B							
#/Type Container	Liquid								2							
	Solid								1							
									1P							
Volume									500							
Preservatives									-							
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/ PCB	Herb				Metal	CN						
		Lionville Laboratory Use Only														
									Metal							

TRIX ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
Soil Sediment Solid Sludge Water Oil Air Drum Solids Drum Liquids EP/TCLP Leachate Wipe Other Fish	011	J168N5			SO	1-15-08	1435							X						

ecial Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	1-25-08	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

0000000036

T. Etherington | R T Coffman

roject Designation 100-F Remaining Sites Burial Grounds - Other Solid Quick T	**Sampling Location** 118-F-6 anomaly 1	**SAF No.** RC-033
ce Chest No. AFS-06-004	**Field Logbook No.** EFL-1174-4 / **COA** R118F62000	**Method of Shipment** Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A080178	**Bill of Lading/Air Bill No.** See OSPC

8G 15 DAY

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential RAD

Special Handling and/or Storage

NA

Preservation	Cool 4C	Cool 4C									
Type of Container	gG	3G									
No. of Container(s)	1	1	1-21-08								
Volume	1000mL	1000 mL									
SAMPLE ANALYSIS	VOA - 8260A (TCL)	RCF SHIP SARGON	1-21-08								

Sample No.	Matrix *	Sample Date	Sample Time			RCF							
J168M5	OTHER SOLID	1/15/08	1005	X	X	18938	633g						1

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Etherington	1-17-08 1145	RT Coffman / RT Coffman	1145 1/17/08
RT Coffman / RT Coffman	1/17/08 1630	RT Coffman / RT Coffman 3728 IA	1630 1/17/08
3728 IA	1-21-08 0850	KM Singleton	1-21-08 0850
KM Singleton	1-21-08 0910	K. Elizondo	1-21-08 / 0910
M. Kelly / M. Kelly	1-22-08 / 1057	KM Singleton	1-22-08 1057
KM Singleton	1-24-08 1500	FED EX	

SPECIAL INSTRUCTIONS

samples from 3728 Ref # IA.
3728 Custodian removed samples for shipping on 1/21/08.
Sampler unavailable to relinquish

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 1-25-08 0930
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000000032

Collector	Company Contact	Telephone No.	Project Coordinator	Price Code	Data Turnaround
T. Etherington	R T Coffman	528-6409	KESSNER, JH	8G	15 DAY

Project Designation	Sampling Location	SAF No.
100-F Remaining Sites Burial Grounds - Other Solid Quick T	118-F-6 anomalies	RC-033

Ice Chest No.	Field Logbook No.	COA	Method of Shipment
EAC-96-030	EFL-1174-4	R118F62000	Fed Ex

Shipped To	Offsite Property No.	Bill of Lading/Air Bill No.
EBERLINE SERVICES / LIONVILLE	A080178	See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential RAD

Special Handling and/or Storage

NA

Preservation	None	None										
Type of Container	P	P										
No. of Container(s)	1	1										
Volume	1000mL	500mL										
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time											
J168M6	OTHER SOLID	1/15/08	1025	X										2
J168M7	OTHER SOLID		1325	X										4
J168M8	OTHER SOLID		1415	X										9
J168M9	OTHER SOLID		1440	X										12

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Etherington	1-17-08 1145	RTCoffman / RT Coffman	1145 1/17/08
RTCoffman / RT Coffman	1630 1/17/08	Refer # 1A, 3728	1630 1/17/08
Refer # 1A, 3728	1-24-08 0735	KM Singleton	1-24-08 0735
KM Singleton	1-24-08 1500 WCH	FED EX	
Fed Ex	1-25-08 0930		1-25-08 0930
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 - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Niobium-94, Radium-226, Silver-108 metastable}

samples from 3728 Ref # A.
3728 Custodian removed samples for shipping on 1/24/08.
Sampler unavailable to relinquish

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

0000000038

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-033-040	Page 1 of 2
Collector: T. Etherington	Company Contact: R T Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH	Price Code: 8G / Data Turnaround: 15 DAY
Project Designation: 100-F Remaining Sites Burial Grounds - Other Solid Quick T	Sampling Location: 118-F-6 anomalies		SAF No.: RC-033	
Ice Chest No.: NA	Field Logbook No.: EFL-1174-4	COA: R118F62000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential RAD

Special Handling and/or Storage

NA

Preservation	None	None	NONE							
Type of Container	P	P	P							
No. of Container(s)	1	1	1							
Volume	1000mL	500mL	~~500~~ 1000mL mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	RCF SHIP SCREEN							

Sample No.	Matrix *	Sample Date	Sample Time											
168M6	OTHER SOLID	1/15/08	1025				X	18947	851g					2
168M7	OTHER SOLID		1325				X	18948	992g					4
168M8	OTHER SOLID		1415		X		X	18949	876g					9
168M9	OTHER SOLID		1440				X	18950	492g					12

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T Etherington	1-17-08 1145	RT COFFMAN / RT Coffman	1/17/08 1145
RT COFFMAN / RT Coffman	1/17/08 1630	KESSER # 1A, 3728	1/17/08 1630
RCFER #1A, 3728	1-21-08 0855	MM Singleton	1-21-08 0855
MM Singleton / WCH	1-21-08 0910	K. Ellison / KEllison	1-21-08 / 0910
RCF	1-22-08 / 1056	MM Singleton	1-22-08 1056
MM Singleton / WCH	1-22-08 1200	RCFER # 1A, 3728 / WCH	1-22-08 1200

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 - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Niobium-94, Radium-226, Silver-108 metastable}

samples from 3728 Ref # 1A.
3728 Custodian removed samples for shipping on 1/21/08.
Sampler unavailable to relinquish

See page 2 of 2 For analysis

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

/CH-EE-011

000000039

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: T. Etherington	Company Contact: R T Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8G	Data Turnaround: 15 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Other Solid Quick T	Sampling Location: 118-F-6 anomalies		SAF No.: RC-033
Ice Chest No.: EAC-96-030	Field Logbook No.: EFL-1174-4	COA: R118F62000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A080178		Bill of Lading/Air Bill No.: EL 05PC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential RAD

Special Handling and/or Storage

NA

Preservation	None	NONE		1-24-08							
Type of Container	P	P									
No. of Container(s)	1	1	1-21-08								
Volume	500mL	500 mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	REF SHIP SCREEN									

Sample No.	Matrix *	Sample Date	Sample Time			REF #							
J168N0	OTHER SOLID	1/15/08	1335	X	X	18942	109g						5
J168N1	OTHER SOLID		1345	X	X	18943	434g						6
J168N2	OTHER SOLID		1355	X	X	18944	101g						7
J168N3	OTHER SOLID		1405	X	X	18945	37g						8
J168N4	OTHER SOLID		1425	X	X	18946	103g						10

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T.Etherington	1-17-08 1145	RTCoffman/RTCoffman	1/17/08 1145
RT Coffman/RT Coffman	1/17/08 1630	REF # IA, 3728	1/17/08 1630
REF # IA 3728	LOCH 1-21-08 0855	KMSingleton	1-21-08 0855
KMSingleton	LOCH 1-21-08 0910	K. Gibson/	REF 1-21-08 0910
Mike Rose	REF 1-22-08 1056	KMSingleton	1-22-08 1056
KMSingleton	LOCH 1-24-08 1500	FED EX	

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 - 7470 - (CV)

samples from 3728 Ref # IA.
3728 Custodian removed samples for shipping on 1/21/08.
Sampler unavailable to relinquish

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: 1-25-08 0930
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000000040

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: T. Etherington	Company Contact: R T Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8G	Data Turnaround: 15 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Other Solid Quick T	Sampling Location: 118-F-6 anomalies		SAF No.: RC-033
Ice Chest No.: ERC-96-030	Field Logbook No.: EFL-1174-4	COA: R118F62000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080178		Bill of Lading/Air Bill No.: 5L05PC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential RAD

Special Handling and/or Storage

NA

Preservation	None	NONE	1-24-08								
Type of Container	P	P									
No. of Container(s)	1	01	1-21-08								
Volume	500mL	500 mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	RCF SHIP SCREEN									

Sample No.	Matrix *	Sample Date	Sample Time										
J168N5	OTHER SOLID	1/15/08	1435	X	X								11
					8940	91g							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Etherington	1-17-08 1145	RTCoffman / RTCoffman	1145 1/17/08
RTCoffman / RTCoffman	1630 1/17/08	Refer # 1A, 3728	1630 1/17/08
Refer #1A, 3728	1-21-08 0900	KMSingleton	1-21-08 0900
KMSingleton	WCH 1-21-08 0910	K. Sliason / KS	RCF 1-21-08 0910
[illegible]	RCF [illegible]	KMSingleton	1-22-08 1056
KMSingleton	WCH 1-24-08 1500	FEDEX	

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 - 7470 - (CV)

samples from 3728 Ref # 1A.
3728 Custodian removed samples for shipping on 1/21/08.
Sampler unavailable to relinquish

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: [illegible]	Title	Date/Time: 1-25-08 0930
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

000000041

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-033

Date: 1-25-08

LvLI Batch #: 08011498

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7924 9375 2174 7926 3700 4547
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.2	°C	Cooler # AFS-06-004 ERC-96-030
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.

RECEIVED
FEB 2008

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1099

DATE RECEIVED: 01/25/08 LVL LOT #: 0801L498

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J168M5	001	SO	08LVK017	01/15/08	N/A	01/28/08
J168M5	001 M2	SO	08LVG016	01/15/08	N/A	01/28/08
J168M5	001 MS	SO	08LVK017	01/15/08	N/A	01/28/08
J168M5	001 MSD	SO	08LVK017	01/15/08	N/A	01/28/08

LAB QC:

VBLKSO	MB1	SO	08LVK017	N/A	N/A	01/28/08
VBLKSO	MB1 BS	SO	08LVK017	N/A	N/A	01/28/08
VBLKSP	MB1	SO	08LVG016	N/A	N/A	01/28/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-033
LVL #: 0801L498
SDG/SAF # K1099/RC-033

W.O. #: 11343-606-001-9999-00
Date Received: 01-25-2008

GC/MS VOLATILE

One (1) solid sample was collected on 01-15-2008.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL volatile target compounds on 01-15-2008.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. The sample was analyzed within required holding time.

2. Non-target compounds were detected in the samples.

3. Sample J168M5 DL required a medium level dilution and an additional 2-fold dilution, because it contained high levels of target compounds.

4. Five (5) of twenty-one (21) surrogate recoveries were outside acceptance criteria. Sample J168M5 was diluted, reanalyzed and reported.

5. Twenty-five (25) of seventy (70) matrix spike recoveries were outside acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. The method blank 08LVK017-MB1 contained the common laboratory contaminant Methylene Chloride at a level less than 3x the CRQL. The method blank 08LVG016-MB1 was below the reporting limit for all target compounds.

8. All internal standard area and retention time criteria were met.

r:\group\data\2008\voa\tnu\0801-498ksol1.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 22 pages.

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

LIONVILLE LABORATORY INC.

9. The result for the solid sample was reported on an 'as-received basis', due to the sample matrix.

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

11. 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.

12. "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

2/5/08
Date

GLOSSARY

DATA QUALIFIERS

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

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

MP - **Missed Peak:** Manually added peak not found by automatic quan program.

PA - **Peak Assignment:** Quan report was changed to reflect correct peak assignment.

RI - **Routine Integration:** Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.

SP - **Split Peak:** The automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.

PI - **Proper Integration:** A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

Volatiles by GC/MS, HSL List

Report Date: 02/04/08 09:33

RFW Batch Number: 0801L498 Client: TNUHANFORD RC-033 K1099 Work Order: 11343606001 Page: 1a

	Cust ID:	J168M5	J168M5	J168M5	J168M5	VBLKSO	VBLKSO BS
Sample Information	RFW#:	001	001 DL	001 MS	001 MSD	08LVK017-MB1	08LVK017-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	0.926	2.00	1.06	1.02	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Level:	LOW	MED	LOW	LOW	LOW	LOW
Surrogate Recovery	Toluene-d8	152 * %	103 %	124 %	87 %	93 %	94 %
	Bromofluorobenzene	190 * %	104 %	150 * %	99 %	109 %	105 %
	1,2-Dichloroethane-d4	186 * %	123 %	156 * %	109 %	107 %	110 %
		fl	fl	fl	fl	fl	fl
Chloromethane		9 U	2500 U	81 %	56 %	10 U	53 %
Bromomethane		9 U	2500 U	131 %	85 %	10 U	90 %
Vinyl Chloride		9 U	2500 U	112 %	69 %	10 U	71 %
Chloroethane		9 U	2500 U	126 %	83 %	10 U	83 %
Methylene Chloride		17 B	1200 U	123 %	70 %	13	79 %
Acetone		30000 E	35000 D	436 * %	0 * %	10 U	291 %
Carbon Disulfide		5 U	1200 U	187 * %	120 %	5 U	121 %
1,1-Dichloroethene		5 U	1200 U	142 %	92 %	5 U	91 %
1,1-Dichloroethane		5 U	1200 U	155 * %	101 %	5 U	102 %
1,2-Dichloroethene (total)		5 U	1200 U	139 %	90 %	5 U	90 %
Chloroform		5 U	1200 U	168 * %	107 %	5 U	110 %
1,2-Dichloroethane		5 U	1200 U	189 * %	119 %	5 U	117 %
2-Butanone		48	2500 U	375 * %	171 %	10 U	185 %
1,1,1-Trichloroethane		5 U	1200 U	169 * %	110 %	5 U	113 %
Carbon Tetrachloride		5 U	1200 U	165 * %	104 %	5 U	110 %
Bromodichloromethane		5 U	1200 U	172 * %	113 %	5 U	113 %
1,2-Dichloropropane		5 U	1200 U	153 * %	99 %	5 U	97 %
cis-1,3-Dichloropropene		5 U	1200 U	167 * %	106 %	5 U	104 %
Trichloroethene		5 U	1200 U	136 %	88 %	5 U	89 %
Dibromochloromethane		5 U	1200 U	168 * %	105 %	5 U	101 %
1,1,2-Trichloroethane		5 U	1200 U	163 * %	101 %	5 U	95 %
Benzene		5 U	1200 U	145 * %	94 %	5 U	93 %
Trans-1,3-Dichloropropene		5 U	1200 U	186 * %	115 %	5 U	109 %
Bromoform		5 U	1200 U	166 * %	103 %	5 U	94 %
4-Methyl-2-pentanone		12	2500 U	238 * %	124 %	10 U	117 %
2-Hexanone		11 B	2500 U	332 * %	182 %	2 J	155 %
Tetrachloroethene		5 U	1200 U	131 %	82 %	5 U	85 %
1,1,2,2-Tetrachloroethane		5 U	1200 U	230 * %	123 %	5 U	106 %
Toluene		7	1200 U	152 * %	86 %	5 U	95 %

*= Outside of EPA CLP QC limits.

000000007

Cust ID:	J168M5	J168M5	J168M5	J168M5	VBLKSO	VBLKSO BS
RFW#:	001	001 DL	001 MS	001 MSD	08LVK017-MB1	08LVK017-MB1
Level:	LOW	MED	LOW	LOW	LOW	LOW
Chlorobenzene	5 U	1200 U	146 * %	92 %	5 U	92 %
Ethylbenzene	5 U	1200 U	149 * %	93 %	5 U	94 %
Styrene	5 U	1200 U	147 * %	93 %	5 U	92 %
Xylenes (total)	5 U	1200 U	145 * %	91 %	5 U	92 %
cis-1,2-dichloroethene	5 U	1200 U	140 %	91 %	5 U	90 %
trans-1,2-dichloroethene	5 U	1200 U	138 %	90 %	5 U	91 %

*= Outside of EPA CLP QC limits.

000000008

Cust ID: VBLKSP

Sample Information

RFW#: 08LVG016-MB1
Matrix: SOLID
D.F.: 1.00
Units: ug/Kg
Level: MED

Surrogate Recovery	Toluene-d8	97	%
	Bromofluorobenzene	96	%
	1,2-Dichloroethane-d4	118	%

Chloromethane	1200	U
Bromomethane	1200	U
Vinyl Chloride	1200	U
Chloroethane	1200	U
Methylene Chloride	130	J
Acetone	1200	U
Carbon Disulfide	620	U
1,1-Dichloroethene	620	U
1,1-Dichloroethane	620	U
1,2-Dichloroethene (total)	620	U
Chloroform	620	U
1,2-Dichloroethane	620	U
2-Butanone	1200	U
1,1,1-Trichloroethane	620	U
Carbon Tetrachloride	620	U
Bromodichloromethane	620	U
1,2-Dichloropropane	620	U
cis-1,3-Dichloropropene	620	U
Trichloroethene	620	U
Dibromochloromethane	620	U
1,1,2-Trichloroethane	620	U
Benzene	620	U
Trans-1,3-Dichloropropene	620	U
Bromoform	620	U
4-Methyl-2-pentanone	1200	U
2-Hexanone	1200	U
Tetrachloroethene	620	U
1,1,2,2-Tetrachloroethane	620	U
Toluene	620	U

*= Outside of EPA CLP QC limits.

000000009

Cust ID: **VBLKSP**

RFW#: **08LVG016-MB1**
Level: MED

Chlorobenzene	620	U
Ethylbenzene	620	U
Styrene	620	U
Xylenes (total)	620	U
cis-1,2-dichloroethene	620	U
trans-1,2-dichloroethene	620	U

*= Outside of EPA CLP QC limits.

000000010

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J168M5

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 0801L498-001

Sample wt/vol: 5.40 (g/mL) G Lab File ID: K012806

Level: (low/med) LOW Date Received: 01/25/08

% Moisture: not dec. 0 Date Analyzed: 01/28/08

Column: (pack/cap) CAP Dilution Factor: 0.926

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 67-63-0	ISOPROPYL ALCLHOL	9.272	4000	JN
2.	UNKNOWN	10.734	9	J
3.	UNKNOWN	13.971	4	J
4.	UNKNOWN	15.050	5	J
5.	UNKNOWN	17.608	30	J
6.	UNKNOWN	19.540	8	J
7. 100-52-7	BENZALDEHYDE	20.967	10	JN
8.	UNKNOWN	21.141	5	J
9.	UNKNOWN	21.524	9	J
10.	UNKNOWN	22.063	10	J
11.	UNKNOWN	22.342	20	J
12.	UNKNOWN	22.533	10	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J168M5DL

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 0801L498-001 DL

Sample wt/vol: 4.00 (g/mL) G Lab File ID: G012815

Level: (low/med) MED Date Received: 01/25/08

% Moisture: not dec. 100 Date Analyzed: 01/28/08

Column: (pack/cap) CAP Dilution Factor: 2.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKSO

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 08LVK017-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: K012804

Level: (low/med) LOW Date Received: 01/28/08

% Moisture: not dec. 0 Date Analyzed: 01/28/08

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKSP

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID Lab Sample ID: 08LVG016-MB1

Sample wt/vol: 4.00 (g/mL) G Lab File ID: G012813

Level: (low/med) MED Date Received: 01/28/08

% Moisture: not dec. 0 Date Analyzed: 01/28/08

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

ille Laboratory Use Only

3OIL 498

Custody Transfer Record/Lab Work Request

Page ___ of ___

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

TNU HANFORD SAF# RC-033

Final Proj. Sampling Date

Proj# 11343-606-001-9999-00

Proj Contact/Phone#

Lville Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 15 days

Rec'd 1-25-08 Date Due 2-9-08

		A	B
Refrigerator #		6	2
#/Type Container	Liquid		
	Solid	1G	1P
Volume		1L	1L 500
Preservatives			
ANALYSES REQUESTED	ORGANIC: VOA		
	ORGANIC: BNA		
	ORGANIC: Pest/PCB		
	ORGANIC: Herb		
	INORG: ~~Tot~~ Metal ~~Hg~~		
	INORG: CN		
Lionville Laboratory Use Only		0624H	Met 1

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
001	J168M5			SO	1-15-08	1005
002	M6					1025
003	M7					1325
004	M8					1415
005	M9					1440
006	N0					1335
007	N1					1345
008	N2					1355
009	N3					1405
010	N4					1425

Matrix: X = Air; Oil; Sediment; Solid; Sludge; Water; Oil; Air; Drum Solids; Drum Liquids; TCLP/TCLP Leachate; Wipe; Other; Fish

Special Instructions:

met (1) = HSL + B, Mo, Si (NOTL)

Special Instructions:

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

Relinquished by	Received by	Date	Time
D. Ep	[signature]	1-25-08	0930

Relinquished by	Received by	Date	Time

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

000000015

000000016

t TNU HANFORD SAF# RC033

Final Proj. Sampling Date

ct# See Pg 1

ot Contact/Phone#

ville Laboratory Project Manager O. T.

Del TAT

Rec'd Date Due

Refrigerator #								B 2							
#/Type Container	Liquid							1							
	Solid							1P							
Volume								500							
Preservatives								–							
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal	CN						
		Lionville Laboratory Use Only													
								Metal							

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
011	J168N5			SO	1-15-08	1435							X						

Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	K. Kennedy	1-25-08	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

J. Etherington

Project Designation 100-F Remaining Sites Burial Grounds - Other Solid Quick T	**Sampling Location** 118-F-6 anomaly 1		**SAF No.** RC-033
Chest No. AFS-06-004	**Field Logbook No.** EFL-1174-4	**COA** R118F62000	**Method of Shipment** Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A086178		**Bill of Lading/Air Bill No.** See OSPC

8G 15 DAY

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential RAD

Special Handling and/or Storage

A

Preservation	Cool 4C	Cool 4C										
Type of Container	aG	2G										
No. of Container(s)	1	1	1-21-08									
Volume	1000mL	1000 mL										
SAMPLE ANALYSIS	VOA - 8260A (TCL)	RCF SHIP SEALON	1-21-08									

Sample No.	Matrix *	Sample Date	Sample Time			RCF							
68M5	OTHER SOLID	1/15/08	1005	X	X	18938	633g						1

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J. Etherington	1-17-08 1145	R. Coffman / R. Coffman	1/17/08 1145
R. Coffman / R. Coffman	1/17/08 1630	R. Coffman / R. Coffman #3228 IA	1/17/08 1630
3728 IA	1-21-08 0850	M. Singleton	1-21-08 0850
M. Singleton WCH	1-21-08 0910	K. Elliott RCF	1-21-08 0910
K. Elliott RCF	1-22-08 1057	M. Singleton WCH	1-22-08 1057
M. Singleton WCH	1-24-08 1500	FED EX	

SPECIAL INSTRUCTIONS

samples from 3728 Ref # IA.
3728 Custodian removed samples for shipping on 1/21/08.
Sampler unavailable to relinquish

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 1-25-08 0930
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000017

Collector	Company Contact	Telephone No.	Project Coordinator	Price Code	Data Turnaround
T. Etherington	R T Coffman	528-6409	KESSNER, JH	8G	15 DAY

Project Designation	Sampling Location	SAF No.
100-F Remaining Sites Burial Grounds - Other Solid Quick T	118-F-6 anomalies	RC-033

Ice Chest No.	Field Logbook No.	COA	Method of Shipment
ERC-96-030	EFL-1174-4	R118F62000	Fed Ex

Shipped To	Offsite Property No.	Bill of Lading/Air Bill No.
EBERLINE SERVICES / LIONVILLE	A080178	See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential RAD

Special Handling and/or Storage

NA

Preservation	None	None									
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	1000mL	500mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (1) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J168M6	OTHER SOLID	1/15/08	1025	X									2
J168M7	OTHER SOLID		1325	X									4
J168M8	OTHER SOLID		1415	X									9
J168M9	OTHER SOLID		1440	X									12

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Etherington	1-17-08 1145	RTCoffman / RT Coffman	1/17/08 1145
RTCoffman / RT Coffman	1/17/08 1630	RefER #1A, 3728	1/17/08 1630
RefER #1A, 3728	1-24-08 0735	KM Singleton	1-24-08 0735
KM Singleton	1-24-08 1500 (WCH)	FED EX	
FED EX	1-25-08 0930	[illegible]	1-25-08 0930

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 - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Niobium-94, Radium-226, Silver-108 metastable}

samples from 3728 Ref # A
3728 Custodian removed samples for shipping on 1/24/08.
Sampler unavailable to relinquish

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

VCH-EE-011

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-033-040	Page 1 of 2
llector T. Etherington	Company Contact R T Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH	Price Code: 8G Data Turnaround: 15 DAY
oject Designation 100-F Remaining Sites Burial Grounds - Other Solid Quick T	Sampling Location 118-F-6 anomalies		SAF No. RC-033	
Chest No. NA	Field Logbook No. EFL-1174-4	COA R118F62000	Method of Shipment Fed Ex	
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. NA		Bill of Lading/Air Bill No. NA	

OSSIBLE SAMPLE HAZARDS/REMARKS

otential RAD

pecial Handling and/or Storage

A

Preservation	None	None	NONE							
Type of Container	P	P	P							
No. of Container(s)	1	1	1							
Volume	1000mL	500mL	~~500~~ 1000mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	RCF SHIP SCREN							

Sample No.	Matrix *	Sample Date	Sample Time				RCF							
68M6	OTHER SOLID	1/15/08	1025			X	18947	85g						2
68M7	OTHER SOLID		1325			X	18948	992g						4
68M8	OTHER SOLID		1415		X	X	18949	876g						9
68M9	OTHER SOLID		1440			X	18950	492g						12

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T Etherington	1-17-08 1145	RT Coffman / RT Coffman	1/17/08 1145
T Coffman / RT Coffman	1/17/08 1630	Refer # 1A, 3728	1/17/08 1630
Ref # 1A, 3728	1-21-08 0855	KM Singleton	1-21-08 0855
KM Singleton (WCH)	1-21-08 0910	K. Ellison / Kell	1-21-08 / 0910
Mike Mitchell (RCF)	1-22-08 / 1056	KM Singleton	1-22-08 1056
KM Singleton (WCH)	1-22-08 1200	Ref # 1A, 3728 (WCH)	1-22-08 1200

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 - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Niobium-94, Radium-226, Silver-108 metastable}

samples from 3728 Ref # 1A.
3728 Custodian removed samples for shipping on 1-21-08.
Sampler unavailable to relinquish

See page 2 of 2 For analysis

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

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000019

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: T. Etherington	Company Contact: R T Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8G	Data Turnaround: 15 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Other Solid Quick T	Sampling Location: 118-F-6 anomalies		SAF No.: RC-033
Ice Chest No.: EAC-96-030	Field Logbook No.: EFL-1174-4	COA: R118F62000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A080178		Bill of Lading/Air Bill No.: EE 05PC

POSSIBLE SAMPLE HAZARDS/REMARKS
Potential RAD

Special Handling and/or Storage
NA

Preservation	None	NONE		1/24/08							
Type of Container	P	P									
No. of Container(s)	1	1	1/21/08								
Volume	500mL	500 mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	REF SHIP SCREEN									

Sample No.	Matrix *	Sample Date	Sample Time			REF #							
168N0	OTHER SOLID	1/15/08	1335	X	X	18942	109g						5
168N1	OTHER SOLID		1345	X	X	18943	434g						6
168N2	OTHER SOLID		1355	X	X	18944	101g						7
168N3	OTHER SOLID		1405	X	X	18945	37g						8
168N4	OTHER SOLID		1425	X	X	18946	103g						10

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: T.Etherington	Date/Time: 1-17-08 1145	Received By/Stored In: RTCOFFMAN/RTCoffman Date/Time: 1145 1/17/08
Relinquished By/Removed From: RT COFFMAN/RT Coffman	Date/Time: 1630 1/17/08	Received By/Stored In: REFER # 1A, 3728 Date/Time: 1630 1/17/08
Relinquished By/Removed From: Refer # 1A 3728 LOCH	Date/Time: 1-21-08 0855	Received By/Stored In: KMSimpleton Date/Time: 1-21-08 0855
Relinquished By/Removed From: KMSimpleton LOCH	Date/Time: 1-21-08 0910	Received By/Stored In: REF K.Gleason Date/Time: 1-21-08 0910
Relinquished By/Removed From: M.Kent REF	Date/Time: 1-22-08 1056	Received By/Stored In: KMSimpleton Date/Time: 1-22-08 1056
Relinquished By/Removed From: KMSimpleton LOCH	Date/Time: 1-24-08 1500	Received By/Stored In: FED EX 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 - 7470 - (CV)

samples from 3728 Ref # 1A.
3728 Custodian removed samples for shipping on 1/21/08.
Sampler unavailable to relinquish

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: [signature]	Title	Date/Time: 1-25-08 0930
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

/CH-EE-011

000000020

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-033-041

Collector: T. Etherington	Company Contact: R T Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8G	Data Turnaround: 15 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Other Solid Quick T	Sampling Location: 118-F-6 anomalies		SAF No.: RC-033
Ice Chest No.: ERC-96-030	Field Logbook No.: EFL-1174-4	COA: R118F62000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080178		Bill of Lading/Air Bill No.: 5LOSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential RAD

Special Handling and/or Storage

NA

Preservation	None	NONE	4/1-24-08								
Type of Container	P	P									
No. of Container(s)	1	01	4/1-21-08								
Volume	500mL	500 mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	RCF SHIP SCREEN									

Sample No.	Matrix *	Sample Date	Sample Time										
168N5	OTHER SOLID	1/15/08	1435	X	X								11
					18940	91g							

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: T. Etherington Date/Time: 1-17-08 1145	Received By/Stored In: RT COFFMAN / RT Coffman Date/Time: 1/17/08 1145
Relinquished By/Removed From: RT Coffman / RT Coffman Date/Time: 1/17/08 1630	Received By/Stored In: REFER # IA. 3728 Date/Time: 1/17/08 1630
Relinquished By/Removed From: Refer # IA. 3728 Date/Time: 1-21-08 0900	Received By/Stored In: KM Singleton Date/Time: 1-21-08 0900
Relinquished By/Removed From: KM Singleton WCH Date/Time: 1-21-08 0910	Received By/Stored In: RCF K. Eliason Date/Time: 1-21-08 / 0910
Relinquished By/Removed From: RCF Date/Time: [illegible]	Received By/Stored In: KM Singleton Date/Time: 1-22-08 1056
Relinquished By/Removed From: KM Singleton WCH Date/Time: 1-24-08 1500	Received By/Stored In: FED EX 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 - 7470 - (CV)

samples from 3728 Ref # IA.
3728 Custodian removed samples for shipping on 1/21/08.
Sampler unavailable to relinquish

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: [illegible]	Title	Date/Time: 1-25-08 0930
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000021

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-033

Date: 1-25-08

LvLI Batch #: 08011498

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7924 9375 2174 7926 3700 4547
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.2	°C	Cooler # AFS-06-004 ERC-96-030
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