

0070025

SAF-RC-059
Verification Sampling at 618-3 and 618-8
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Jeanette Duncan (3) H9-02

MJP 05/03/06
-INITIAL/DATE

COMMENTS:

RECEIVED
JUN 22 2006

SDG K0204

SAF-RC-059

EDMC

Waste Site: 618-3 and 618-8

Date: 24 April 2006
To: Washington Closure Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: Verification Sampling at 618-3 and 618-8
Subject: Inorganics - Data Package No. K0204-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0204 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J11264	1/31/06	Soil	C	See note 1
J11265	1/31/06	Soil	C	See note 1
J11266	1/31/06	Soil	C	See note 1
J11267	1/31/06	Soil	C	See note 1
J11268	1/31/06	Soil	C	See note 1
J11269	1/31/06	Soil	C	See note 1
J11271	1/31/06	Soil	C	See note 1
J11272	1/31/06	Soil	C	See note 1
J11273	1/31/06	Soil	C	See note 1
J11274	1/31/06	Soil	C	See note 1
J11274	1/31/06	Soil	C	See note 1
J11276	1/31/06	Soil	C	See note 1

1 - ICP metals (6010B).

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 300 Area Remedial Action Sampling and Analysis Plan (DOE/RL-2001-48, June 2004). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are

000001

as follows: Soil samples must be analyzed within 28 days for ICP metals.

All holding times were acceptable.

· **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

Field (Equipment) Blank

Two equipment blanks (J11269 & J11276) were submitted for analysis. Barium and lead were detected in both equipment blanks. Under the WCH statement of work, no qualification is required.

· **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are

000002

qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

· **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

Two sets of field duplicates (J11264/J11265 & J11271/J11272) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates were acceptable.

· **Analytical Detection Levels**

Reported analytical detection levels are compared against the 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

· **Completeness**

Data package No. K0204 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

000003

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

WCH, Contract #20266, *Validation Statement of Work*, Washington Closure Hanford Incorporated, July 7, 2003.

DOE/RL-2001-48, Rev. 1, *300 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, June 2004.

Appendix 1

Glossary of Data Reporting Qualifiers

000005

Qualifiers which may be applied by data validators in compliance with BHI validation SOW are as follows:

- U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.
- UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.
- BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.
- R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.
- UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.
- NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).
- N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

000006

Appendix 2
Summary of Data Qualification

000007

METALS DATA QUALIFICATION SUMMARY*

SDG: K0204	REVIEWER: TLI	PROJECT: 618-3 & 618-8	PAGE <u>1</u> OF <u>1</u>
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

000009

Project: WASHINGTON CLOSURE HANFORD																	
Lab: LLI		SDG: K0204															
Sample Number		J11264		J11265		J11266		J11267		J11268		J11269		J11271		J11272	
Remarks		Duplicate															
Sample Date		1/31/06		1/31/06		1/31/06		1/31/06		1/31/06		1/31/06		1/31/06		1/31/06	
Inorganics	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Silver	0.2	0.15	U	0.15	U	0.14	U	0.15	U	0.14	U	0.14	U	0.15	U	0.15	U
Arsenic	10	2.7		2.4		2.8		2.5		2.6		0.33	U	3.4		4.1	
Barium	2	76.5		75.5		64.3		71.3		62.7		1.3		81.3		79.4	
Cadmium	0.2	0.07	U	0.08	U	0.07	U										
Chromium	1	8.9		8.4		8.4		9.7		8.9		0.16	U	10.4		11.7	
Lead	5	3.7		3.6		3.4		3.9		2.7		0.45		4.5		4.2	
Selenium	1	0.65		0.46		0.66		0.44		0.46		0.35	U	0.81		0.76	
Sample Number		J11273		J11274		J11275		J11276									
Remarks		E. Blank															
Sample Date		1/31/06		1/31/06		1/31/06		1/31/06									
Inorganics	RQL	Result	Q	Result	Q	Result	Q	Result	Q								
Silver	0.2	0.15	U	0.15	U	0.15	U	0.14	U								
Arsenic	10	3.8		2.4		2.4		0.33	U								
Barium	2	97.6		87.0		69.1		1.8									
Cadmium	0.2	0.07	U	0.07	U	0.07	U	0.07	U								
Chromium	1	12.4		10.2		9.4		0.16	U								
Lead	5	5.1		4.4		3.9		0.72									
Selenium	1	0.51		0.85		0.69		0.35	U								

000010

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/13/06

CLIENT: TNUHANFORD RC-059 K0204
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L205

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11264	Silver, Total	0.15 u	MG/KG	0.15	1.0
		Arsenic, Total	2.7	MG/KG	0.36	1.0
		Barium, Total	76.5	MG/KG	0.02	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Chromium, Total	8.9	MG/KG	0.17	1.0
		Lead, Total	3.7	MG/KG	0.33	1.0
		Selenium, Total	0.65	MG/KG	0.38	1.0
-002	J11265	Silver, Total	0.15 u	MG/KG	0.15	1.0
		Arsenic, Total	2.4	MG/KG	0.36	1.0
		Barium, Total	75.5	MG/KG	0.02	1.0
		Cadmium, Total	0.08 u	MG/KG	0.08	1.0
		Chromium, Total	8.4	MG/KG	0.17	1.0
		Lead, Total	3.6	MG/KG	0.33	1.0
		Selenium, Total	0.46	MG/KG	0.39	1.0
-003	J11266	Silver, Total	0.14 u	MG/KG	0.14	1.0
		Arsenic, Total	2.8	MG/KG	0.35	1.0
		Barium, Total	64.3	MG/KG	0.02	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Chromium, Total	8.4	MG/KG	0.16	1.0
		Lead, Total	3.4	MG/KG	0.32	1.0
		Selenium, Total	0.66	MG/KG	0.37	1.0
-004	J11267	Silver, Total	0.15 u	MG/KG	0.15	1.0
		Arsenic, Total	2.5	MG/KG	0.35	1.0
		Barium, Total	71.3	MG/KG	0.02	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Chromium, Total	9.7	MG/KG	0.17	1.0
		Lead, Total	3.9	MG/KG	0.32	1.0
		Selenium, Total	0.44	MG/KG	0.38	1.0

Handwritten:
 JL
 4/24/06

000011

000000009

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/13/06

CLIENT: TNUHANFORD RC-059 K0204
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L205

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-005	J11268	Silver, Total	0.14	u MG/KG	0.14	1.0
		Arsenic, Total	2.6	MG/KG	0.35	1.0
		Barium, Total	62.7	MG/KG	0.02	1.0
		Cadmium, Total	0.07	u MG/KG	0.07	1.0
		Chromium, Total	8.9	MG/KG	0.16	1.0
		Lead, Total	2.7	MG/KG	0.32	1.0
		Selenium, Total	0.46	MG/KG	0.37	1.0
-006	J11269	Silver, Total	0.14	u MG/KG	0.14	1.0
		Arsenic, Total	0.33	u MG/KG	0.33	1.0
		Barium, Total	1.3	MG/KG	0.02	1.0
		Cadmium, Total	0.07	u MG/KG	0.07	1.0
		Chromium, Total	0.16	u MG/KG	0.16	1.0
		Lead, Total	0.45	MG/KG	0.30	1.0
		Selenium, Total	0.35	u MG/KG	0.35	1.0
-007	J11271	Silver, Total	0.15	u MG/KG	0.15	1.0
		Arsenic, Total	3.4	MG/KG	0.36	1.0
		Barium, Total	81.3	MG/KG	0.02	1.0
		Cadmium, Total	0.07	u MG/KG	0.07	1.0
		Chromium, Total	10.4	MG/KG	0.17	1.0
		Lead, Total	4.5	MG/KG	0.33	1.0
		Selenium, Total	0.81	MG/KG	0.38	1.0
-008	J11272	Silver, Total	0.15	u MG/KG	0.15	1.0
		Arsenic, Total	4.1	MG/KG	0.36	1.0
		Barium, Total	79.4	MG/KG	0.02	1.0
		Cadmium, Total	0.07	u MG/KG	0.07	1.0
		Chromium, Total	11.7	MG/KG	0.17	1.0
		Lead, Total	4.2	MG/KG	0.33	1.0
		Selenium, Total	0.76	MG/KG	0.38	1.0

Handwritten signature and date: 4/24/06

000012

000000010

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/13/06

CLIENT: TNUHANFORD RC-059 K0204
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L205

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	J11273	Silver, Total	0.15 u	MG/KG	0.15	1.0
		Arsenic, Total	3.8	MG/KG	0.35	1.0
		Barium, Total	97.6	MG/KG	0.02	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Chromium, Total	12.4	MG/KG	0.17	1.0
		Lead, Total	5.1	MG/KG	0.32	1.0
		Selenium, Total	0.51	MG/KG	0.37	1.0
-010	J11274	Silver, Total	0.15 u	MG/KG	0.15	1.0
		Arsenic, Total	2.4	MG/KG	0.36	1.0
		Barium, Total	87.0	MG/KG	0.02	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Chromium, Total	10.2	MG/KG	0.17	1.0
		Lead, Total	4.4	MG/KG	0.33	1.0
		Selenium, Total	0.85	MG/KG	0.38	1.0
-011	J11275	Silver, Total	0.15 u	MG/KG	0.15	1.0
		Arsenic, Total	2.4	MG/KG	0.36	1.0
		Barium, Total	69.1	MG/KG	0.02	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Chromium, Total	9.4	MG/KG	0.17	1.0
		Lead, Total	3.9	MG/KG	0.32	1.0
		Selenium, Total	0.69	MG/KG	0.38	1.0
-012	J11276	Silver, Total	0.14 u	MG/KG	0.14	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	1.8	MG/KG	0.02	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Chromium, Total	0.16 u	MG/KG	0.16	1.0
		Lead, Total	0.72	MG/KG	0.30	1.0
		Selenium, Total	0.35 u	MG/KG	0.35	1.0

JL
 2/24/06

000013

000000011

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

000014



Analytical Report

Client: TNU-HANFORD RC-059
LVL#: 0602L205
SDG/SAF#: K0204/RC-059

W.O.#: 11343-606-001-9999-00
Date Received: 02-02-06

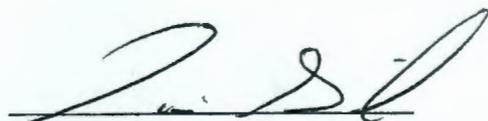
METALS CASE NARRATIVE

1. This narrative covers the analyses of 12 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits with the exception of CCV3 for Cadmium at 110.9%. There should be no significant impact to sample data as all sample results between CCV2 and CCV3 were less than the IDL for Cadmium.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. The preparation/method blank for 1 analyte was outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
 - a). The MB result for Barium was greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and samples J11269 and J11276 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.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

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.

000015

10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.
11. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
13. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.



Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

jjw/m02-205

2/14/06
Date



000016

88888888

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-059-001	Page 1 of 1	
Collector R. Fahlberg/R. Kerkow		Company Contact R. Kerkow		Telephone No. 373-9985		Project Coordinator KESSNER, JH	Price Code 8K	Data Turnaround 15 Days
Project Designation Verification Sampling at 618-3 and 618-8		Sampling Location 300-FF-2 618-3 Burial Ground		SAF No. RC-059		Air Quality <input type="checkbox"/>		
Ice Chest No. SAWS-103		Field Logbook No. EL 1395-11		COA RG61832000		Method of Shipment Fed EX		
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060277		Bill of Lading/Air Bill No. See OSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Potentially contaminated Tie to TOXMG < DOT Limits Special Handling and/or Storage None</i>				Preservation	None	None		
				Type of Container	aG	aG		
				No. of Container(s)	1	1		
				Volume	250mL	60mL		
SAMPLE ANALYSIS SDG: K0204				See item (1) in Special Instructions.	Isotopic Uranium, Total Uranium	R25 2-1-06		
Sample No.	Matrix *	Sample Date	Sample Time					
J11264	SOIL	1-31-06	1230	X	X			
J11265	SOIL	1-31-06	1230	X	X			
J11266	SOIL	1-31-06	1240	X	X			
J11267	SOIL	1-31-06	1245	X	X			
J11268	SOIL	1-31-06	1250	X	X			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From		Date/Time		Sign/Print Names		Date/Time		
R. Fahlberg R. Kerkow		1430 1-31-06		IB 3728		1430 1-31-06		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		
IB, 3728		2-1-06 1000		R2 Steffler R. J. Steffler		2-1-06 1000		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		
R2 Steffler R. J. Steffler		1500 2-1-06		Fed EX				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		
Fed EX		2-20-06 1010		D. Smith		2-20-06 1010		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		
LABORATORY SECTION	Received By	Title				Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time		

000017

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-059-002		Page 1 of 1			
Collector R Fahberg/R Kerkow		Company Contact R Kerkow		Telephone No. 373-9985		Project Coordinator KESSNER, JH		Price Code 8K Data Turnaround 15 Days			
Project Designation Verification Sampling at 618-3 and 618-8		Sampling Location 300-FF-2 618-3 Burial Ground		SAF No. RC-059		Air Quality <input type="checkbox"/>					
Ice Chest No. SAWS-103		Field Logbook No. EL 1395-11		COA RG61832000		Method of Shipment Fed EX					
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. A060277				Bill of Lading/Air Bill No. See OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS Potentially contaminated Tia To Jaxm6 < POT Limits. Special Handling and/or Storage None				Preservation	None	None					
				Type of Container	aG	gG					
				No. of Container(s)	1	1					
				Volume	250mL	60mL					
SAMPLE ANALYSIS SDG K0204				See item (1) in Special Instructions.	Isotopic Uranium Total Uranium						
						R2S 2-1-06					
Sample No.	Matrix *	Sample Date	Sample Time								
J11269	SOIL	1-31-06	1010	X	X						
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From R. Fahberg R. Fahberg		Date/Time 1-31-06 1430		Received By/Stored In IB 3728		Date/Time 1-31-06 1430		(1) ICP Metals - 6010A (Supertace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver) Personnel not available to relinquish samples from 3728 Ref # IB on 2-1-06		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Residue DL=Drum Liquids T=Timber WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From IB 3728		Date/Time 2-1-06 1000		Received By/Stored In RZ Steffler R. Z. Steffler		Date/Time 2-1-06 1000					
Relinquished By/Removed From RZ Steffler R. Z. Steffler		Date/Time 2-1-06 1500		Received By/Stored In Fed EX		Date/Time					
Relinquished By/Removed From Fed EX		Date/Time 2-2-06 10910		Received By/Stored In J. J. Smith		Date/Time 2-2-06 10910					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title						Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

000018

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-059-004		Page 1 of 1		
Collector R Fahlberg/R Kerkow		Company Contact R Kerkow		Telephone No. 373-9985		Project Coordinator KESSNER, JH		Price Code 8K Data Turnaround 15 Days		
Project Designation Verification Sampling at 618-3 and 618-8		Sampling Location 300-FF-2 618-8 Burial Ground		SAF No. RC-059		Air Quality <input type="checkbox"/>				
Ice Chest No. SAWS-103		Field Logbook No. EL 1395-11		COA RG61832000		Method of Shipment Fed EX				
Shipped To EBERLINE SERVICES LIONVILLE		Offsite Property No. A060277		Bill of Lading/Air Bill No. See OSPL						
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOLOGICAL CONTAMINATION PL 1/31/06				Preservation		None				
Special Handling and/or Storage NONE PL 1/31/06				Type of Container		aG				
				No. of Container(s)		1				
				Volume		250mL				
SAMPLE ANALYSIS SDG: K0204				Sec Item (1) in Special Instructions		Isotopic Uranium, Total Uranium				
Sample No.		Matrix *	Sample Date	Sample Time						
J11271		SOIL	1-31-06	1310	X	X			A1	
J11272		SOIL	1-31-06	1310	X	X			A1	
J11273		SOIL	1-31-06	1315	X	X			A2	
J11274		SOIL	1-31-06	1320	X	X			A3	
J11275		SOIL	1-31-06	1325	X	X			A4	
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) ICP Metals - 6010A (Supertrace) [Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver] Personnel not available to Relinquish samples from 3728 Ref # 1B on 2/1/06		Matrix * S=Soil SF=Solvent SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dross Solids DL=Dross Liquids T=Times WI=Wipe L=Liquid V=Vegetation X=Other
K Fahlberg R Kerkow		1-31-06 1430		REF 1B, 3728		1-31-06 1430				
Ref 1B, 3728		2-1-06 1000		R2 Steffler R2 Steffler		2-1-06 1000				
R2 Steffler R2 Steffler		2-1-06 1500		Fed EX						
Fed EX		2-2-06 10910		J Smith		2-2-06 10910				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION		Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time				

000019

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-059-005		Page 1 of 1			
Collector R Fahberg/R Kerkow		Company Contact R Kerkow		Telephone No. 373-9985		Protect Coordinator KESSNER, JH		Price Code 8K Data Turnaround 15 Days			
Project Designation Verification Sampling at 618-3 and 618-8		Sampling Location 300-FF-2 618-8 Burial Ground		SAF No. RC-059		Air Quality <input type="checkbox"/>					
Ice Chest No. SAWS-103		Field Logbook No. EL 1395-11		COA RG61832000		Method of Shipment Fed EX					
Shipped To EBERLINE SERVICES LIONVILLE		Offsite Property No. A060277		Bill of Lading/Air Bill No. See OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOLOGICAL CONTAMINATION per 1/31/06 < POT Limits				Preservation	None	None					
Special Handling and/or Storage NONE per 1/31/06				Type of Container	aG	G					
				No. of Container(s)	1	1					
				Volume	250mL	60mL					
SAMPLE ANALYSIS SDG: K0204				See Item (1) in Special Instructions.	Isotopic Uranium, Total Uranium R25 2-1-06						
Sample No.	Matrix *	Sample Date	Sample Time								
J11276	SOIL	1-31-06	1000	X					A1		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From R. Fahberg		Date/Time 1-31-06 1430		Received By/Stored In REF 1B, 3728		Date/Time 1-31-06 1430		(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver) Personnel not available to relinquish samples from 3728 Ref # 1B on 2/1/06		S-Soil SE-Sediments SO-Solid SL-Sludge W-Water O-Oil A-Air DS-Dry Solids DL-Dry Liquids T-Tissue WI-Wipe L-Liquid V-Vegetation X-Other	
Relinquished By/Removed From Ref 1B, 3728		Date/Time 2-1-06 1000		Received By/Stored In RZ Steffler		Date/Time 2-1-06					
Relinquished By/Removed From RZ Steffler		Date/Time 2-1-06 1500		Received By/Stored In Fed EX		Date/Time					
Relinquished By/Removed From Fed EX		Date/Time 2-2-06 10910		Received By/Stored In [Signature]		Date/Time 2-2-06 10910					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

000020

Appendix 5
Data Validation Supporting Documentation

000021

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	618-3 618-8		DATA PACKAGE: K0204		
VALIDATOR:	TCT	LAB: LLE	DATE: 4/22/06		
			SDG: K0204		
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide		
SAMPLES/MATRIX					
J11264	J11265	J11266	T11267	J11268	J11269
J11271	J11272	J11273	J11274	J11275	J11276
					soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? Yes No N/A

Comments: _____

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? Yes No N/A

Initial calibrations acceptable? Yes No N/A

ICP interference checks acceptable? Yes No N/A

ICV and CCV checks performed on all instruments? Yes No N/A

ICV and CCV checks acceptable? Yes No N/A

Standards traceable? Yes No N/A

Standards expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) Yes No N/A

ICB and CCB results acceptable? (Levels D, E) Yes No N/A

Laboratory blanks analyzed? Yes No N/A

Laboratory blank results acceptable? Yes No N/A

Field blanks analyzed? (Levels C, D, E) Yes No N/A

Field blank results acceptable? (Levels C, D, E) Yes No N/A

Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: barium in eb

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? Yes No N/A

MS/MSD results acceptable? Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) Yes No N/A

MS/MSD standards expired? (Levels D, E) Yes No N/A

LCS/BSS samples analyzed? Yes No N/A

LCS/BSS results acceptable? Yes No N/A

Standards traceable? (Levels D, E) Yes No N/A

Standards expired? (Levels D, E) Yes No N/A

Transcription/calculation errors? (Levels D, E) Yes No N/A

Performance audit sample(s) analyzed? Yes No N/A

Performance audit sample results acceptable? Yes No N/A

Comments: no Pts

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

- Duplicate RPD values acceptable?..... Yes No N/A
- Duplicate results acceptable? Yes No N/A
- MS/MSD standards NIST traceable? (Levels D, E)..... Yes No N/A
- MS/MSD standards expired? (Levels D, E)..... Yes No N/A
- Field duplicate RPD values acceptable?..... Yes No N/A
- Field split RPD values acceptable? Yes No N/A
- Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: _____

6. ICP QUALITY CONTROL (Levels D and E)

- ICP serial dilution samples analyzed?..... Yes No N/A
- ICP serial dilution %D values acceptable?..... Yes No N/A
- ICP post digestion spike required?..... Yes No N/A
- ICP post digestion spike values acceptable? Yes No N/A
- Standards traceable? Yes No N/A
- Standards expired? Yes No N/A
- Transcription/calculation errors?..... Yes No N/A

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

- Duplicate injections performed as required? Yes No N/A
- Duplicate injection %RSD values acceptable? Yes No N/A
- Analytical spikes performed as required? Yes No N/A
- Analytical spike recoveries acceptable? Yes No N/A
- Standards traceable? Yes No N/A
- Standards expired? Yes No N/A
- MSA performed as required? Yes No N/A
- MSA results acceptable? Yes No N/A
- Transcription/calculation errors? Yes No N/A

Comments: _____

8. HOLDING TIMES (all levels)

- Samples properly preserved? Yes No N/A
- Sample holding times acceptable? Yes No N/A

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

- Results reported for all requested analyses?..... Yes No N/A
- Results supported in the raw data? (Levels D, E)..... Yes No N/A
- Samples properly prepared? (Levels D, E)..... Yes No N/A
- Detection limits meet RDL?..... Yes No N/A
- Transcription/calculation errors? (Levels D, E)..... Yes No N/A

Comments: _____

Appendix 6

Additional Documentation Requested by Client

000027

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/13/06

CLIENT: TNUHANFORD RC-059 K0204
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L205

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	06L0083-MB1	Silver, Total	0.14 u	MG/KG	0.14	1.0
		Arsenic, Total	0.34 u	MG/KG	0.34	1.0
		Barium, Total	0.09	MG/KG	0.02	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Chromium, Total	0.16 u	MG/KG	0.16	1.0
		Lead, Total	0.31 u	MG/KG	0.31	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0

000028

000000012

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/13/06

CLIENT: TNUHANFORD RC-059 K0204
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L205

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J11264	Silver, Total	5.0	0.15u	5.3	94.3	1.0
		Arsenic, Total	203	2.7	210	95.3	1.0
		Barium, Total	273	76.5	210	93.4	1.0
		Cadmium, Total	5.1	0.07u	5.3	96.2	1.0
		Chromium, Total	30.9	8.9	21.0	104.8	1.0
		Lead, Total	55.0	3.7	52.6	97.5	1.0
		Selenium, Total	194	0.65	210	91.8	1.0

000029

000000013

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/13/06

CLIENT: TNUHANFORD RC-059 K0204
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L205

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE RPD		
-001REP	J11264	Silver, Total	0.15u	0.15u	NC	1.0
		Arsenic, Total	2.7	2.9	7.1	1.0
		Barium, Total	76.5	74.3	2.9	1.0
		Cadmium, Total	0.07u	0.07u	NC	1.0
		Chromium, Total	8.9	9.4	5.5	1.0
		Lead, Total	3.7	3.8	2.7	1.0
		Selenium, Total	0.65	0.49	27.4	1.0

000030

000000014

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/13/06

CLIENT: TNUHANFORD RC-059 K0204
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0602L205

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	06L0083-LC1	Silver, LCS	49.5	50.0	MG/KG	99.0
		Arsenic, LCS	972	1000	MG/KG	97.2
		Barium, LCS	496	500	MG/KG	99.2
		Cadmium, LCS	25.7	25.0	MG/KG	102.8
		Chromium, LCS	51.9	50.0	MG/KG	103.8
		Lead, LCS	256	250	MG/KG	102.6
		Selenium, LCS	932	1000	MG/KG	93.2

000031

000000015

Date: 24 April 2006
To: Washington Closure Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: Verification Sampling at 618-3 and 618-8
Subject: Radiochemistry - Data Package No. K0204-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0204 prepared by Eberline Services (EB). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J11264	1/31/06	Soil	C	See note 1
J11265	1/31/06	Soil	C	See note 1
J11266	1/31/06	Soil	C	See note 1
J11267	1/31/06	Soil	C	See note 1
J11268	1/31/06	Soil	C	See note 1
J11269	1/31/06	Soil	C	See note 1
J11271	1/31/06	Soil	C	See note 1
J11272	1/31/06	Soil	C	See note 1
J11273	1/31/06	Soil	C	See note 1
J11274	1/31/06	Soil	C	See note 1
J11274	1/31/06	Soil	C	See note 1
J11276	1/31/06	Soil	C	See note 1

1 - Total uranium and isotopic uranium by alpha spectroscopy.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 300 Area Remedial Action Sampling and Analysis Plan (DOE/RL-2001-48, June 2004). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Data Requested by Client

000001

DATA QUALITY PARAMETERS

· Holding Times

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

· Preparation (Method) Blanks

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

Two equipment blanks (J11269 & J11276) were submitted for analysis. Total uranium was detected in both equipment blanks. Under the WCH statement of work, no qualification is required.

· Accuracy

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

000002

All accuracy results were acceptable.

· **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

Two sets of field duplicates (J11264/J11265 & J11271/J11272) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicates were acceptable.

· **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the remaining waste sites RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

· **Completeness**

Data package No. K0204 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found

REFERENCES

WCH, Contract #20266, *Validation Statement of Work*, Washington Closure Hanford Incorporated, July 7, 2003.

DOE/RL-2001-48, Rev. 1, *300 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, June 2004.

Appendix 1

Glossary of Data Reporting Qualifiers

000005

Qualifiers which may be applied by data validators in compliance with the BHI statement of work are as follows:

- U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.
- UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.
- J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.
- R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.
- UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2
Summary of Data Qualification

000007

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K0204	REVIEWER: TLI	PROJECT: 618-3 & 618-8	PAGE <u>1</u> OF <u>1</u>
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

000008

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

000009

Project: WASHINGTON CLOSURE HANFORD																	
Laboratory: EB																	
Case		SDG: K0204															
Sample Number		J11264		J11265		J11266		J11267		J11268		J11269		J11271		J11272	
Remarks		Duplicate															
Sample Date		1/31/06		1/31/06		1/31/06		1/31/06		1/31/06		1/31/06		1/31/06		1/31/06	
Radiochemistry	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Total Uranium (ug/g)	1	1.21		1.34		1.61		1.33		1.51		0.449		1.28		1.13	
Uranium-233/234	1	0.447		0.612		0.523		0.677		0.523		0.190	U	0.540		0.736	
Uranium-235	1	0.036	U	0	U	0	U	0.039	U	0.090	U	0	U	0	U	0.081	U
Uranium-238	1	0.745		0.504		0.747		0.548		0.448		0.190	U	0.439		0.401	
Sample Number		J11273		J11274		J11275		J11276									
Remarks		E. Blank															
Sample Date		1/31/06		1/31/06		1/31/06		1/31/06									
Radiochemistry	RQL	Result	Q	Result	Q	Result	Q	Result	Q								
Total Uranium (ug/g)	1	1.67		1.72		1.35		0.496									
Uranium-233/234	1	0.780		1.19		0.778		0.242	U								
Uranium-235	1	0.056	U	0.314	U	0.078	U	0.084	U								
Uranium-238	1	0.734		0.363	U	0.518		0.173	U								

000010

* - RQL exceeded

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize potential miss-interpretation of results. All other qualifiers shown were applied during validation.

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-001

J11264

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602009-01</u>	Client sample id <u>J11264</u>	
Dept sample id <u>7721-001</u>	Location/Matrix <u>300-FF-2 618-3 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 12:30 81.1 g</u>	
% solids <u>92.3</u>	Custody/SAF No <u>RC-059-001 RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.21	0.14	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.447	0.24	0.23	1.0		U
Uranium 235	15117-96-1	0.036	0.072	0.28	1.0	U	U
Uranium 238	U-238	0.745	0.30	0.23	1.0		U

Verification Smply. 618-3 & 618-8

Handwritten signature
4/26/06

000011

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

EBERLINE SERVICES / RICHMOND
 SAMPLE DELIVERY GROUP K0204

7721-002

J11265

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602009-02</u>	Client sample id <u>J11265</u>	
Dept sample id <u>7721-002</u>	Location/Matrix <u>300-FF-2 618-3 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 12:30</u> <u>93.1 g</u>	
% solids <u>93.5</u>	Custody/SAF No <u>RC-059-001</u> <u>RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.34	0.15	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.612	0.29	0.28	1.0		U
Uranium 235	15117-96-1	0	0.087	0.33	1.0	U	U
Uranium 238	U-238	0.504	0.29	0.28	1.0		U

Verification Smpg. 618-3 & 618-8

Handwritten signature
 4/24/06

000012

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-003

J11266

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602009-03</u>	Client sample id <u>J11266</u>	
Dept sample id <u>7721-003</u>	Location/Matrix <u>300-FF-2 618-3 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 12:40 77.3 g</u>	
% solids <u>89.2</u>	Custody/SAF No <u>RC-059-001 RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.61	0.19	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.523	0.25	0.19	1.0		U
Uranium 235	15117-96-1	0	0.060	0.23	1.0	U	U
Uranium 238	U-238	0.747	0.26	0.19	1.0		U

Verification Smply. 618-3 & 618-8

Handwritten signature
4/24/06

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

000013

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-004

J11267

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	<u>SDG K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602009-04</u>	Client sample id <u>J11267</u>	
Dept sample id <u>7721-004</u>	Location/Matrix <u>300-FF-2 618-3 Burial Gr</u>	<u>SOLID</u>
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 12:45</u>	<u>99.3 g</u>
% solids <u>93.4</u>	Custody/SAF No <u>RC-059-001</u>	<u>RC-059</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.33	0.15	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.677	0.33	0.25	1.0		U
Uranium 235	15117-96-1	0.039	0.078	0.30	1.0	U	U
Uranium 238	U-238	0.548	0.26	0.25	1.0		U

Verification Smplg. 618-3 & 618-8

Handwritten: 4/24/06

Lab id <u>EBERLINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

000014

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-005

J11268

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602009-05</u>	Client sample id <u>J11268</u>	
Dept sample id <u>7721-005</u>	Location/Matrix <u>300-FF-2 618-3 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 12:50</u> <u>91.3 g</u>	
% solids <u>92.8</u>	Custody/SAF No <u>RC-059-001</u> <u>RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.51	0.17	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.523	0.30	0.29	1.0		U
Uranium 235	15117-96-1	0.090	0.091	0.35	1.0	U	U
Uranium 238	U-238	0.448	0.23	0.29	1.0		U

Verification Smply. 618-3 & 618-8

Handwritten:
✓
4/24/06

000015

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-006

J11269

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602009-06</u>	Client sample id <u>J11269</u>	
Dept sample id <u>7721-006</u>	Location/Matrix <u>300-FF-2 618-3 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 10:10 106.3 g</u>	
% solids <u>99.5</u>	Custody/SAF No <u>RC-059-002</u>	<u>RC-059</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.449	0.051	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.190	0.15	0.29	1.0	U	U
Uranium 235	15117-96-1	0	0.092	0.35	1.0	U	U
Uranium 238	U-238	0.190	0.15	0.29	1.0	U	U

Verification Smply. 618-3 & 618-8

K
4/24/06

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

000016

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-007

J11271

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602009-07</u>	Client sample id <u>J11271</u>	
Dept sample id <u>7721-007</u>	Location/Matrix <u>300-FF-2 618-8 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 13:10 77.9 g</u>	
% solids <u>90.2</u>	Custody/SAF No <u>RC-059-004 RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.28	0.15	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.540	0.27	0.26	1.0		U
Uranium 235	15117-96-1	0	0.082	0.31	1.0	U	U
Uranium 238	U-238	0.439	0.27	0.26	1.0		U

Verification Smpg. 618-3 & 618-8

Handwritten:
✓
4/24/06

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

000017

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-008

J11272

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602009-08</u>	Client sample id <u>J11272</u>	
Dept sample id <u>7721-008</u>	Location/Matrix <u>300-FF-2 618-8 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 13:10 66.2 g</u>	
% solids <u>91.0</u>	Custody/SAF No <u>RC-059-004 RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.13	0.13	0.017	1.0		U T
Uranium 233/234	U-233/234	0.736	0.34	0.26	1.0		U
Uranium 235	15117-96-1	0.081	0.081	0.31	1.0	U	U
Uranium 238	U-238	0.401	0.20	0.26	1.0		U

Verification Smply. 618-3 & 618-8

W
4/24/06

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

000018

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-009

J11273

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602009-09</u>	Client sample id <u>J11273</u>	
Dept sample id <u>7721-009</u>	Location/Matrix <u>300-FF-2 618-8 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 13:15 99.0 g</u>	
% solids <u>92.1</u>	Custody/SAF No <u>RC-059-004 RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.67	0.19	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.780	0.38	0.35	1.0		U
Uranium 235	15117-96-1	0.056	0.11	0.42	1.0	U	U
Uranium 238	U-238	0.734	0.37	0.35	1.0		U

Verification Smply. 618-3 & 618-8

[Handwritten Signature]
4/24/06

000019

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-010

J11274

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	<u>SDG_K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602009-10</u>	Client sample id <u>J11274</u>	
Dept sample id <u>7721-010</u>	Location/Matrix <u>300-FF-2 618-8 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 13:20</u> <u>92.6 g</u>	
% solids <u>92.3</u>	Custody/SAF No <u>RC-059-004</u> <u>RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.72	0.20	0.017	1.0		U_T
Uranium 233/234	U-233/234	1.19	0.53	0.40	1.0		U
Uranium 235	15117-96-1	0.314	0.25	0.48	1.0	U	U
Uranium 238	U-238	0.363	0.31	0.40	1.0	U	U

Verification Smply. 618-3 & 618-8

R
4/24/06

000020

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-011

J11275

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602009-11</u>	Client sample id <u>J11275</u>	
Dept sample id <u>7721-011</u>	Location/Matrix <u>300-FF-2 618-8 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 13:25 68.0 g</u>	
% solids <u>92.9</u>	Custody/SAF No <u>RC-059-004 RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.35	0.15	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.778	0.33	0.25	1.0		U
Uranium 235	15117-96-1	0.078	0.079	0.30	1.0	U	U
Uranium 238	U-238	0.518	0.26	0.25	1.0		U

Verification Smpg. 618-3 & 618-8

R
4/24/06

000021

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0204

7721-012

J11276

DATA SHEET

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R602009-12</u>	Client sample id <u>J11276</u>	
Dept sample id <u>7721-012</u>	Location/Matrix <u>300-FF-2 618-8 Burial Gr SOLID</u>	
Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 10:00 92.7 g</u>	
% solids <u>99.8</u>	Custody/SAF No <u>RC-059-005 RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.496	0.057	0.017	1.0		U_T
Uranium 233/234	U-233/234	0.242	0.21	0.26	1.0	U	U
Uranium 235	15117-96-1	0.084	0.084	0.32	1.0	U	U
Uranium 238	U-238	0.173	0.14	0.26	1.0	U	U

Verification Smpg. 618-3 & 618-8

*R
4/24/08*

000022

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

000023

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K0204 was composed of twelve soil samples designated under SAF No. RC-059 with a Project Designation of: Verification Sampling at 618-3 and 618-8. The Sampling Locations were 300-FF-2 618-3 Burial Ground, and 300-FF-2 618-8 Burial Ground.

The samples were 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 22, 2006.

2.0 ANALYSIS NOTES

2.1 Isotopic Uranium Analysis

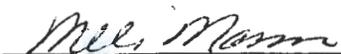
No problems were encountered during the course of the analyses.

2.2 Total Uranium Analysis

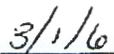
No problems were encountered during the course of the analyses.

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 C. Mannion
Senior Program Manager



Date

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-059-001		Page 1 of 1			
Collector R Fahlberg/R Kerkow		Company Contact R Kerkow		Telephone No. 373-9985		Project Coordinator KESSNER, JH		Price Code 8K Data Turnaround 15 Days			
Project Designation Verification Sampling at 618-3 and 618-8		Sampling Location 300-FF-2 618-3 Burial Ground		K50204 (7721)		SAF No. RC-059		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC-96-069		Field Logbook No. EL 1395-11		COA RG61832000		Method of Shipment Fed EX					
Shipped To EBERLINE SERVICES LIONVILLE		Offsite Property No. A060241		Bill of Lading/Air Bill No. See OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS Potentially contaminated Tic to J01XM6 < DOT limits Special Handling and/or Storage None			Preservation None		None						
None 000025			Type of Container aG		aG						
			No. of Container(s) 1		1						
			Volume 250mL		60mL						
			SAMPLE ANALYSIS		See item (1) in Special Instructions. R25 2-1-06		Isotopic Uranium, Total Uranium				
Sample No.		Matrix *	Sample Date	Sample Time							
J11264		SOIL	1-31-06	1230	X	X					
J11265		SOIL	1-31-06	1230	X	X					
J11266		SOIL	1-31-06	1240	X	X					
J11267		SOIL	1-31-06	1245	X	X					
J11268		SOIL	1-31-06	1250	X	X					
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From R. Fahlberg R. Fahlberg		Date/Time 1-31-06 1430		Received By/Stored In IB 3728		Date/Time 1-31-06 1430		(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver) Personnel not available to relinquish samples from 3728 Ref # IB on 2/1/06		S=Soil SE=Settlescent 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	
Relinquished By/Removed From IB, 3728		Date/Time 2-1-06 1100		Received By/Stored In RZ Steffler RZ Steffler		Date/Time 2-1-06 1100					
Relinquished By/Removed From RZ Steffler RZ Steffler		Date/Time 2-1-06 1500		Received By/Stored In Fed EX		Date/Time					
Relinquished By/Removed From FED EX		Date/Time		Received By/Stored In Alex Kerkow		Date/Time 2/2/06 10:00					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title						Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-059-002	Page 1 of 1
Collector R Fahberg/R Kerkow		Company Contact R Kerkow		Telephone No. 373-9985		Project Coordinator KESSNER, JH	
Project Designation Verification Sampling at 618-3 and 618-8		Sampling Location 300-FF-2 618-3 Burial Ground		K0204 (7721)		Price Code 8K Data Turnaround 15 Days	
Ice Chest No. ERC-96-069		Field Logbook No. EL 1395-11		COA RG61832000		Air Quality <input type="checkbox"/>	
Shipped To EBERLINE SERVICES LIONVILLE		Offsite Property No. A060241		Method of Shipment Fed EX			
Bill of Lading/Air Bill No. Sec. 05PC		POSSIBLE SAMPLE HAZARDS/REMARKS Potentially contaminated Tia To Jolxmg < DOT Limits					
Special Handling and/or Storage None		Preservation		None			
None		Type of Container		aG			
000026		No. of Container(s)		1			
		Volume		250mL		60mL	
SAMPLE ANALYSIS		See item (1) in Special Instructions.		Isotopic Uranium, Total Uranium			
Sample No.		Matrix *		Sample Date		Sample Time	
J11269		SOIL		1-31-06		1010	
CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From R. Fahberg R. Fahberg		Date/Time 1-31-06		Received By/Stored In RB 3728		Date/Time 1-31-06	
Relinquished By/Removed From RB 3728		Date/Time 2-1-06		Received By/Stored In RZ Steffler RZ Steffler		Date/Time 1100 2-1-06	
Relinquished By/Removed From RZ Steffler RZ Steffler		Date/Time 2-1-06		Received By/Stored In Fed Ex		Date/Time	
Relinquished By/Removed From FEDEX		Date/Time		Received By/Stored In Alex Kelleher		Date/Time 2/2/06 10:00	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
LABORATORY SECTION		Received By		Title		Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time	

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-059-004		Page 1 of 1		
Collector R Fahlberg/R Kerkow		Company Contact R Kerkow		Telephone No. 373-9985		Project Coordinator KESSNER, JH		Price Code 8K Data Turnaround 15 Days		
Project Designation Verification Sampling at 618-3 and 618-8		Sampling Location 300-FF-2 618-8 Burial Ground		K0204 (7721)		SAF No. RC-059		Air Quality <input type="checkbox"/>		
Ice Chest No. ERC-96-069		Field Logbook No. EL 1395-11		COA RG61832000		Method of Shipment Fed EX				
Shipped To EBERLINE SERVICES LIONVILLE		Offsite Property No. A060241		Bill of Lading/Air Bill No. See OSPC						
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOLOGICAL CONTAMINATION per 1/31/06 < DOT Limits				Preservation None		None				
Special Handling and/or Storage NONE per 1/31/06				Type of Container aG		aG				
000027				No. of Container(s) 1		1				
				Volume 250mL		60mL				
SAMPLE ANALYSIS				See item (1) in Special Instructions.		Isotopic Uranium, Total Uranium				
Sample No.	Matrix *	Sample Date	Sample Time							
J11271	SOIL	1-31-06	1310	X	X				A1	
J11272	SOIL	1-31-06	1310	X	X				A1	
J11273	SOIL	1-31-06	1315	X	X				A2	
J11274	SOIL	1-31-06	1320	X	X				A3	
J11275	SOIL	1-31-06	1325	X	X				A4	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <i>R. Fahlberg</i>		Date/Time 1-31-06 1430		Received By/Stored In <i>REF 1B, 3728</i>		Date/Time 1-31-06 1430		(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver) Personnel not available to relinquish samples from 3728 Ref # 1B on 2/1/06		S=Soil SE=Solid SO=Solid Sl=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>Ref 1B, 3728</i>		Date/Time 2-1-06 1100		Received By/Stored In <i>R. Steffler</i>		Date/Time 2-1-06 1100				
Relinquished By/Removed From <i>R. Steffler</i>		Date/Time 2-1-06 1500		Received By/Stored In <i>Fed EX</i>		Date/Time				
Relinquished By/Removed From <i>FED EX</i>		Date/Time		Received By/Stored In <i>Alex Kerkow</i>		Date/Time 2/2/06 10:00				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION	Received By			Title			Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time			

Collector: R Fahlberg/R Kerkow
 Company Contact: R Kerkow
 Telephone No.: 373-9985
 Project Coordinator: KESSNER, JH
 Price Code: **8K**
 Data Turnaround: **15 Days**

Project Designation: Verification Sampling at 618-3 and 618-8
 Sampling Location: 300-FF-2 618-8 Burial Ground **K0204 (7721)**
 SAF No.: RC-059
 Air Quality:

Ice Chest No.: **ERC-96-069**
 Field Logbook No.: EL 1395-11
 COA: RG61832000
 Method of Shipment: Fed EX
 Shipped To: **BERLINE SERVICES LIONVILLE**
 Offsite Property No.: **A060241**
 Bill of Lading/Air Bill No.: **See OSPC**

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOLOGICAL CONTAMINATION per 1/31/06 < DOT Limits	Preservation	None	None										
	Type of Container	G	aG										
	No. of Container(s)	1	1										
	Volume	250mL	60mL										

Special Handling and/or Storage: **NONE per 1/31/06**

000028

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions	Isotopic Uranium, Total Uranium								
------------	----------	-------------	-------------	--------------------------------------	---------------------------------	--	--	--	--	--	--	--	--

J11276	SOIL	1-31-06	1000	X	X								A1

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver) Personnel not available to relinquish samples from 3728 Ref # <u>16</u> on <u>2-1-06</u>				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
R. Fahlberg	1-31-06 1430	DEF IB, 3728	1-31-06 1430					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Ref IB 3728	2-1-06 1100	RZ Steffler RZ Steffler	2-1-06 1100					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
RZ Steffler RZ Steffler	2-1-06 1500	Fed Ex						
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
FED EX		Spec Release	2/2/06 10:00					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Appendix 5
Data Validation Supporting Documentation

000029

**APPENDIX A
RADIOCHEMICAL DATA VALIDATION CHECKLIST**

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	6R-3+8		DATA PACKAGE: K0204		
VALIDATOR:	JLP	LAB:	EB	DATE: 4/22/06	
			SDG:	K0204	
ANALYSES PERFORMED					
Gross Alpha/Beta	Strontium-90	Technetium-99	Alpha Spectroscopy	Gamma Spectroscopy	
Total Uranium	Radium-22	Tritium			
SAMPLES/MATRIX					
	J11264	J11265	J11266	J11267	J11268
	J11271	J11272	J11273	J11274	J11275
					soil

1. Completeness N/A

Technical verification forms present? Yes No N/A

Comments: _____

2. Initial Calibration (Levels D, E) N/A

Instruments/detectors calibrated? Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable? Yes No N/A

Standards Expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments: _____

3. Continuing Calibration (Levels D, E)

N/A

Calibration checked within required frequency?Yes No N/A

Calibration check acceptable?.....Yes No N/A

Calibration check standards traceable?.....Yes No N/A

Calibration check standards expired?Yes No N/A

Calculation check acceptable?Yes No N/A

Comments: _____

4. Background Counts (Levels D, E)

N/A

Background Counts checked within required frequency?Yes No N/A

Background Counts acceptable?.....Yes No N/A

Calculation check acceptable?Yes No N/A

Comments: _____

5. Blanks (Levels B, C, D, E) N/A

Method blank analyzed within required frequency? Yes No N/A

Method blank results acceptable? Yes No N/A

Analytes detected in method blank? Yes No N/A

Field blank(s) analyzed? Yes No N/A

Field blank results acceptable? Yes No N/A

Analytes detected in field blank(s)? Yes No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No N/A

Comments: Total Unknown in both FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) N/A

LCS /BSS analyzed within required frequency? Yes No N/A

LCS/BSS recoveries acceptable? Yes No N/A

LCS/BSS traceable? (Levels D,E) Yes No N/A

LCS/BSS expired? (Levels D,E) Yes No N/A

LCS/BSS levels correct? (Levels D,E) Yes No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No N/A

Comments: _____

7. Chemical Carrier Recovery (Levels C, D, E) N/A

Chemical carrier added? Yes No N/A

Chemical recovery acceptable? Yes No N/A

Chemical carrier traceable? (Levels D, E) Yes No N/A

Chemical carrier expired? (Levels D, E) Yes No N/A

Transcription/Calculation errors? (Levels D, E)..... Yes No N/A

Comments: _____

8. Tracer Recovery (Levels C, D, E) N/A

Tracer added?..... Yes No N/A

Tracer recovery acceptable? Yes No N/A

Tracer traceable? (Levels D, E) Yes No N/A

Tracer expired? (Levels D, E)..... Yes No N/A

Transcription/Calculation errors? (Levels D, E)..... Yes No N/A

Comments: _____

9. Matrix Spikes (Levels C, D, E)..... N/A

Matrix spike analyzed? Yes No N/A

Spike recoveries acceptable? Yes No N/A

Spike source traceable? (Levels D, E) Yes No N/A

Spike source expired? Levels D, E)..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E)..... Yes No N/A

Comments: _____

10. Duplicates (Levels C, D, E) N/A

Duplicates Analyzed at required frequency? Yes No N/A

RPD Values Acceptable? Yes No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No N/A

Comments: _____

11. Field QC Samples (Levels C, D E) N/A

Field duplicate sample(s) analyzed? Yes No N/A

Field duplicate RPD values acceptable? Yes No N/A

Field split sample(s) analyzed? Yes No N/A

Field split RPD values acceptable? Yes No N/A

Performance audit sample(s) analyzed? Yes No N/A

Performance audit sample results acceptable? Yes No N/A

Comments: _____ NO FS or Pds

12. Holding Times (All levels) Yes No N/A

Are sample holding times acceptable? Yes No N/A

Comments: _____

13. Results and Detection Limits (All Levels) N/A

Results reported for all required sample analyses? Yes No N/A

Results supported in raw data? (Levels D, E) Yes No N/A

Results Acceptable? (Levels D, E) Yes No N/A

Transcription/Calculation errors? (Levels D, E) Yes No N/A

MDA's meet required detection limits? Yes No N/A

Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: _____

Appendix 6

Additional Documentation Requested by Client

000036

EBERLINE SERVICES / RICHMOND
 SAMPLE DELIVERY GROUP K0204

7721-014

Method Blank

METHOD BLANK

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	<u>SDG K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602009-14</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7721-014</u>	Material/Matrix _____	<u>SOLID</u>
	SAF No <u>RC-059</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0	0.007	0.017	1.0	U	U_T
Uranium 233/234	U-233/234	0.035	0.070	0.27	1.0	U	U
Uranium 235	15117-96-1	0	0.085	0.32	1.0	U	U
Uranium 238	U-238	0	0.070	0.27	1.0	U	U

Verification Smplg. 618-3 & 618-8

QC-BLANK #55947

000037

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0204

7721-013

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7721</u> Contact <u>Melissa C. Mannion</u> Lab sample id <u>R602009-13</u> Dept sample id <u>7721-013</u>	Client/Case no <u>Hanford</u> SDG <u>K0204</u> Contract No. <u>630</u> Client sample id <u>Lab Control Sample</u> Material/Matrix _____ <u>SOLID</u> SAF No <u>RC-059</u>
---	---

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	3σ	LMTS	PROTOCOL
	pCi/g	(COUNT)	pCi/g	pCi/g	FIERS	TEST	pCi/g	pCi/g	‡	(TOTAL)	LIMITS
Total Uranium (ug/g)	36.8	4.3	0.17	1.0		U_T	36.2	1.4	102	77-123	80-120
Uranium 233/234	18.4	2.1	0.98	1.0		U	19.3	0.77	95	81-119	80-120
Uranium 235	14.6	1.8	0.26	1.0		U	15.7	0.63	93	80-120	80-120
Uranium 238	19.3	2.2	0.93	1.0		U	21.0	0.84	92	82-118	80-120

Verification Smpg. 618-3 & 618-8

QC-LCS #55946

000038

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0204

7721-015

J11266

DUPLICATE

SDG <u>7721</u>	Client/Case no <u>Hanford</u>	SDG <u>K0204</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
DUPLICATE	ORIGINAL	
Lab sample id <u>R602009-15</u>	Lab sample id <u>R602009-03</u>	Client sample id <u>J11266</u>
Dept sample id <u>7721-015</u>	Dept sample id <u>7721-003</u>	Location/Matrix <u>300-FF-2 618-3 Burial Gr SOLID</u>
	Received <u>02/02/06</u>	Collected/Weight <u>01/31/06 12:40 77.3 g</u>
% solids <u>89.2</u>	% solids <u>89.2</u>	Custody/SAF No <u>RC-059-001 RC-059</u>

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
Total Uranium (ug/g)	1.57	0.18	0.017	1.0		U_T	1.61	0.19	0.017		3	31	0.2
Uranium 233/234	0.870	0.34	0.21	1.0		U	0.523	0.25	0.19		50	92	1.6
Uranium 235	0	0.068	0.26	1.0	U	U	0	0.060	0.23	U	-		0
Uranium 238	0.730	0.29	0.21	1.0		U	0.747	0.26	0.19		2	80	0.1

Verification Smplg. 618-3 & 618-8

QC-DUP#3 55948

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>02/22/06</u>

000039