

**SAF-B04-016**  
**Lead-Sheathed Telephone**  
**Communication Cable Sampling –Soils**  
**FINAL VALIDATION PACKAGE**

**COMPLETE COPY OF VALIDATION PACKAGE TO:**

Wendy Thompson	H9-02	<u>JWD / 1-05-05</u> INITIAL/DATE
Jeanette Duncan	(1)	<u>JWD / 1-05-05</u> INITIAL/DATE

**SDG H2736**      **SAF B04-016**

**RECEIVED**  
JAN 31 2005  
**EDMC**

Date: 19 November 2004  
To: Bechtel Hanford Inc. (technical representative)  
From: TechLaw, Inc.  
Project: Lead-Sheathed Telephone Communication Cable Sampling - Other Solid -  
Waste Site 600-235  
Subject: PAH - Data Package No. H2736-LLI (SDG No. H2736)

## **INTRODUCTION**

This memo presents the results of data validation on Data Package No. H2736 -LLI 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	Waste Site	Analysis
J01T79	9/16/04	Soil	C	600-235	See note 1
J01T80	9/16/04	Soil	C	600-235	See note 1
J01T81	9/16/04	Soil	C	600-235	See note 1
J01T82	9/16/04	Soil	C	600-235	See note 1

1 - PAH by 8310

Data validation was conducted in accordance with the Bechtel Hanford Incorporated (BHI) validation statement of work and Sampling and Analysis Plan for Evaluation of Buried Lead-Sheathed Telephone Communications Cable (BHI-01714, Rev. 0, March 2004). Appendices 1 through 5 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

## **DATA QUALITY OBJECTIVES**

- **Holding Times**

Analytical holding times were 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 extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were met.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

#### Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

#### Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries outside control limits are qualified

as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to the MS/MSD being diluted out, all PAH results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

#### Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

Due to the surrogate being diluted out, all PAH results in samples J01T79 and J01T80 were qualified as estimates and flagged "J".

Due to a surrogate recovery above QC limits (155%), all detected results in sample J01T81 were qualified as estimates and flagged "J".

All other surrogate results were acceptable.

- **Precision**

#### Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample.

Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the MS/MSD being diluted out, all PAH results were qualified as estimates and flagged "J".

#### Field Duplicate Samples

No field duplicates submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required detection limits (DL's) to ensure that laboratory detection levels meet the required criteria. Fifteen analytes were reported above the detection limit. Under the BHI statement of work, no qualification is required. All other analytes met the DL.

- **Completeness**

Data package No. H2736-LLI 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**

Due to the surrogate being diluted out, all PAH results in samples J01T79 and J01T80 were qualified as estimates and flagged "J". Due to a surrogate recovery above QC limits (155%), all detected results in sample J01T81 were qualified as estimates and flagged "J". Due to the MS/MSD being diluted out, all PAH results were qualified as estimates and flagged "J". Data flagged "J" indicates that the associated concentration is an estimate, but under the BHI statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Fifteen analytes were reported above the detection limit. Under the BHI statement of work, no qualification is required.

## REFERENCES

BHI, MRB-SBB-A23665, *Validation Statement of Work*, Bechtel Hanford Incorporated, September 5, 1997.

BHI-01714, Rev. 0, *Sampling and Analysis Plan for Evaluation of Buried Lead-Sheathed Telephone Communications Cable*, March 2004.

**Appendix 1**

**Glossary of Data Reporting Qualifiers**

**000006**

Qualifiers which may be applied by data validators in compliance with the 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 same 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 quantitation limit is an estimate.
- 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 usable for decision-making purposes).

000007

**Appendix 2**

**Summary of Data Qualification**

000008

PAH DATA QUALIFICATION SUMMARY\*

SDG: H2736	REVIEWER: TLI	DATE: 11/19/04	PAGE <u>1</u> OF <u>1</u>
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	J01T79, J01T80	Surrogate recovery
All detected analytes	J	J01T81	Surrogate recovery
All	J	All	MS/MSD diluted out

\* - 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.

000009

**Appendix 3**

**Qualified Data Summary and Annotated Laboratory Reports**

000010

Project: BECHTEL-HANFORD														
Laboratory: Lionville Laboratory Inc.														
Case:		SDG: H2736												
Sample Number	J01T79			J01T80			J01T81			J01T82				
Remarks														
Sample Date	9/16/04			9/16/04			9/16/04			9/16/04				
Extraction Date	9/21/04			9/21/04			9/21/04			9/21/04				
Analysis Date	9/24/04			9/24/04			9/24/04			9/24/04				
PAH (8310)	MDL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	
Naphthalene	50	1030	UJ*	1040	UJ*	100	UJ*	101	UJ*					
Acenaphthylene	50	1030	UJ*	1040	UJ*	100	UJ*	101	UJ*					
Acenaphthene	50	1200	J	1040	UJ*	100	UJ*	101	UJ*					
Fluorene	50	620	J	44	J	5.02	UJ	5.04	UJ					
Phenanthrene	50	200	J	52.2	UJ*	8.3	J	3.8	J					
Anthracene	50	51.3	UJ*	52.2	UJ*	2.5	J	5.04	UJ					
Fluoranthene	50	3500	J	370	J	120	J	10.1	UJ					
Pyrene	50	1900	J	99	J	65	J	10.1	UJ					
Benzo(a)anthracene	50	790	J	40	J	16	J	5.04	UJ					
Chrysene	50	2000	J	120	J	25	J	5.04	UJ					
Benzo(b)fluoranthrene	50	6800	J	360	J	28	J	5.04	UJ					
Benzo(k)fluoranthrene	50	1600	J	84	J	6.0	J	5.04	UJ					
Benzo(a)pyrene	50	1700	J	78	J	11	J	5.04	UJ					
Dibenzo(a,h)anthracene	50	240	J	52.2	UJ*	5.02	UJ	5.04	UJ					
Benzo(ghi)perylene	50	1700	J	110	J	12	J	5.04	UJ					
Indeno(1,2,3-cd)pyrene	50	2100	J	130	J	8.5	J	5.04	UJ					

000011

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.

Sample Information	Cust ID:	J01T79	J01T79	J01T79	J01T80	J01T81	J01T82
	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	10.0	10.0	10.0	10.0	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	Triphenylene	D %	D %	D %	D %	155 * %	114 %
		fl	fl	fl	fl	fl	fl
Naphthalene	1030	U	D	D	1040	U	101
Acenaphthylene	1030	U	D	D	1040	U	101
Acenaphthene	1200		D	D	1040	U	101
Fluorene	620		D	D	44	5.02	5.04
Phenanthrene	200		D	D	52.2	8.3	3.8
Anthracene	51.3	U	D	D	52.2	2.5	5.04
Fluoranthene	3500		D	D	370	120	10.1
Pyrene	1900		D	D	99	65	10.1
Benzo (a) anthracene	790		D	D	40	16	5.04
Chrysene	2000		D	D	120	25	5.04
Benzo (b) fluoranthrene	6800		D	D	360	28	5.04
Benzo (k) fluoranthrene	1600		D	D	84	6.0	5.04
Benzo (a) pyrene	1700		D	D	78	11	5.04
Dibenzo (a, h) anthracene	240		D	D	52.2	5.02	5.04
Benzo (ghi) perylene	1700		D	D	110	12	5.04
Indeno (1,2,3-cd) pyrene	2100		D	D	130	8.5	5.04

000012

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

*Handwritten:* J  
 11/15/04  
 12/14/04

RFW Batch Number: 0409L678

Client: TNU-HANFORD B04-016

Work Order: 11343606001 Page: 2

Cust ID: BLK BLK BS

Sample Information RFW#: 04LE1193-MB1 04LE1193-MB1  
 Matrix: SOIL SOIL  
 D.F.: 1.00 1.00  
 Units: ug/kg ug/kg

Triphenylene	120	%	118	%
Naphthalene	100	U	91	%
Acenaphthylene	100	U	73	%
Acenaphthene	100	U	82	%
Fluorene	5.00	U	94	%
Phenanthrene	5.00	U	100	%
Anthracene	5.00	U	100	%
Fluoranthene	10.0	U	107	%
Pyrene	10.0	U	97	%
Benzo (a) anthracene	5.00	U	101	%
Chrysene	5.00	U	101	%
Benzo (b) fluoranthrene	5.00	U	102	%
Benzo (k) fluoranthrene	5.00	U	107	%
Benzo (a) pyrene	5.00	U	103	%
Dibenzo (a, h) anthracene	5.00	U	102	%
Benzo (ghi) perylene	5.00	U	101	%
Indeno(1,2,3-cd)pyrene	5.00	U	91	%

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

000013

*Handwritten signature and date: 11/15/04*

*Handwritten signature*

**Appendix 4**

**Laboratory Narrative and Chain-of-Custody Documentation**

**000014**



## Analytical Report

Client: TNU HANFORD B04-016  
LVL#: 0409L678  
SDG/SAF#: H2736/B04-016

W.O.#: 11343-606-001-9999-00  
Date Received: 09-18-2004

### PAH

Four (4) soil samples were collected on 09-16-2004.

The samples and their associated QC samples were extracted on 09-21-2004 and analyzed according to criteria set for the in Lionville Laboratory SOPs based on SW846, 3rd Edition for Polyaromatic Hydrocarbons on 09-28-2004. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8310.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. The required holding time for extraction and analysis was met.
3. The method blank was below the reporting limits for all target compounds.
4. One (1) of four (4) obtainable surrogate recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
5. All blank spike recoveries were within acceptance criteria.
6. Matrix spike recoveries were unobtainable due to the dilution required for the analyses.
7. Samples J01T79 and J01T80 required a 10-fold dilution due to high concentration of target compounds. The reporting limits were adjusted to reflect the necessary dilution.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy 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

10/9/04  
Date

so:\r:\group\data\pah\tnu hanford\0408-678.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 10 pages.

000015

02

# Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 040548

Initiator: Bryce Santoro  
 Date: 9/29/04  
 Client: TUV

Batch: 04041678  
 Samples: 003  
 Method: SW839/MCAWW/CLP/

Parameter: 08310  
 Matrix: Soil  
 Prep Batch: 04LE1193

## 1. Reason for SDR

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

## b. General Discrepancy

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

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

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

① High surrogate recovery in sample 003. Sample has hits for target analytes.

## 2. Known or Probable Causes(s)

① Possible matrix interference.

## 3. Discussion and Proposed Action

Other Description: Narrate

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

*[Signature]* 9/30/04

## 4. Project Manager Instructions...signature/date:

- Concur with Proposed Action
- Disagree with Proposed Action; See Instruction
- Include in Case Narrative
- Client Contacted:
- Date/Person \_\_\_\_\_
- Add
- Cancel

## 5. Final Action...signature/date:

- Verified re-[log][leach][extract][digest][analysis] (circle)
- Included in Case Narrative
- Hard Copy COC Revised
- Electronic COC Revised
- EDD Corrections Completed

Other Explanation: \_\_\_\_\_

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR

- X Initiator
- X Lab General Manager: M. Taylor
- X Project Mgr. Stone/Johnson/Haslett
- X Technical Mgr. Wesson/Daniels
- X QA (file): Alberts
- Data Management: Feldman
- Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR

- Metals: Beegle
- Inorganic: Perrone
- GC/LC: Kiger
- MS: Rychlak/Layman
- Log-in: Melnic
- Admin: Soos
- Other: \_\_\_\_\_

000016

04070618

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			B04-016-05	Page 1 of 1
Collector Renee Nielson / <i>C. Rivera</i>	Company Contact Wendy Thompson	Telephone No. 372-9597	Project Coordinator KESSNER, JH		Price Code 8J	Data Turnaround 7 Days
Project Designation Lead-Sheathed Telephone Communication Cable Sampling -		Sampling Location North Slope in the Floodplain of Columbia River		SAF No. B04-016	Air Quality <input type="checkbox"/>	
Ice Chest No. DH1 94	Field Logbook No. EL-1517-4	COA BRASC11P10		Method of Shipment Federal Express		
Shipped To <u>LVL</u> BERLINE SERVICES (Formerly TMA)		Offsite Property No. A040 228		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	Cool 4C	Cool 4C										
	Type of Container	aG	aG	aG										
	No. of Container(s)	1	1	1										
	Volume	250mL	250mL	250mL										
Special Handling and/or Storage														
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PAHs - 8310	PCBs - 8082											

000017

Sample No.	Matrix *	Sample Date	Sample Time											
J01T79	SOIL	9-16-04	1101	X	X	X								
J01T80	SOIL	9-16-04	1116	X	X	X								

<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>				Matrix * S=Soil SE=Sediment SO=Solid SF=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>Renee Nielson</i>	Date/Time 9/16/04	Received By/Stored In REF # 2C 3728	Date/Time 9/16/04	(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7470 - (CV)  Personnel not available to relinquish samples from 3728 Ref # 2C on 9/17/04  Samples did not originate in radiological controlled area. No total activity associated with sample/samples. <i>AN</i>				
Relinquished By/Removed From REF 2C 3728	Date/Time 9/17/04 0900	Received By/Stored In S. GALE	Date/Time 9/17/04 0900					
Relinquished By/Removed From S. GALE	Date/Time 9/17/04 0900	Received By/Stored In FED EX	Date/Time					
Relinquished By/Removed From FED EX	Date/Time 9-18-04 1005	Received By/Stored In J. Nielson	Date/Time 9-18-04 1005					
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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B04-016-06		Page 1 of 1			
Collector Renee Nielson / <i>C. Rivera</i>		Company Contact Wendy Thompson		Telephone No. 372-9597		Project Coordinator KESSNER, JH		Price Code 8J		Data Turnaround 7 Days		
Project Designation Lead-Sheathed Telephone Communication Cable Sampling -		Sampling Location North Slope on Bluff Above the Floodplain			SAF No. B04-016		Air Quality <input type="checkbox"/>					
Ice Chest No. <i>BH1 94</i>		Field Logbook No. EL-1517-4		COA BRASC11P10		Method of Shipment Federal Express						
Shipped To <del>BERTRINE SERVICES (Formerly TMA)</del> <i>LVI</i>		Offsite Property No. <i>A040 228</i>			Bill of Lading/Air Bill No. <i>SEE OSPC</i>							
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	None	Cool 4C	Cool 4C					
Special Handling and/or Storage				Type of Container	aG	aG	aG					
				No. of Container(s)	1	1	1					
				Volume	250mL	250mL	250mL					
SAMPLE ANALYSIS				See item (1) in Special Instructions.	PAHs - 8310	PCBs - 8082						
000018	Sample No.	Matrix *	Sample Date	Sample Time								
	J01T81	SOIL	9-16-04	1151	X	X	X					
	J01T82	SOIL	9-16-04	1200	X	X	X					
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); Mercury - 7470 - (CV)  Personnel not available to Relinquish samples from 3728 Ref # <i>2E</i> on <i>9/17/04</i>  Samples did not originate in radiological controlled area. No total activity associated with sample/samples. <i>PN</i>				
<i>R. Nielson</i>		<i>9/16/04 1500</i>		<i>Kel # 2C 3728</i>		<i>9/16/04 1500</i>						
<i>REF # 3728</i>		<i>9/17/04 0900</i>		<i>STATE M. Doh</i>		<i>9/17/04 0900</i>						
<i>S. J. Allen</i>		<i>9/17/04 0900</i>		<i>FED EX</i>								
<i>Fed Ex</i>		<i>9-18-04 1005</i>		<i>V. Blum</i>		<i>9-18-04 1005</i>						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		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				
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**

**GENERAL ORGANIC ANALYSIS DATA VALIDATION CHECKLIST**

VALIDATION LEVEL:	A	B	<b>C</b>	D	E
PROJECT:	LSTCCS 600-235		DATA PACKAGE: H2736		
VALIDATOR:	TCT	LAB:	LLI	DATE: 11/12/04	
			SDG:	H2736	
ANALYSES PERFORMED					
8015	8021	8141	8151	8315	<b>8310</b>
		WTPH-HCID	WTPH-G	WTPH-D	
SAMPLES/MATRIX:					
J01T79 J01T80 J01T81 J01T82					
Soil					

**1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE**

Technical verification documentation present? ..... Yes **No** N/A

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)**

Initial calibrations acceptable? ..... Yes No **N/A**  
 Continuing calibrations 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: \_\_\_\_\_  
 \_\_\_\_\_

**GENERAL ORGANIC ANALYSIS DATA VALIDATION CHECKLIST**

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

Calibration blanks analyzed? (Levels D, E)..... Yes No N/A  
Calibration blank 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/trip blanks analyzed? (Levels C, D, E)..... Yes No N/A  
Field/trip blank results acceptable? (Levels C, D, E)..... Yes No N/A  
Transcription/calculation errors? (Levels D, E)..... Yes No N/A  
Comments: NO FB

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

Surrogates/system monitoring compounds analyzed? ..... Yes No N/A  
Surrogate/system monitoring compound recoveries acceptable? ..... Yes No N/A  
Surrogates traceable? (Levels D, E)..... Yes No N/A  
Surrogates expired? (Levels D, E)..... Yes No N/A  
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: Surr diluted and 79/80 - J all  
Surr high - J all 81 detects  
NO PAS

MS/MSD - dilute J all

**GENERAL ORGANIC 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: MS/MSD diluted out + Jelf

---

---

---

---

---

**6. HOLDING TIMES (all levels)**

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

Comments: \_\_\_\_\_

---

---

---

---

---

**GENERAL ORGANIC ANALYSIS DATA VALIDATION CHECKLIST**

**8. COMPOUND IDENTIFICATION, 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: 15 over  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**9. SAMPLE CLEANUP (Levels D and E)**

Fluorocil ® (or other absorbant) cleanup performed? ..... Yes No  N/A  
Lot check performed? ..... Yes No  N/A  
Check recoveries acceptable? ..... Yes No  N/A  
Check materials traceable? ..... Yes No  N/A  
Check materials Expired? ..... Yes No  N/A  
Analytical batch QC given similar cleanup?..... Yes No  N/A  
Transcription/Calculation Errors?..... Yes No  N/A

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: 19 November 2004  
To: Bechtel Hanford Inc. (technical representative)  
From: TechLaw, Inc.  
Project: Lead-Sheathed Telephone Communication Cable Sampling - Other Solid - Waste Site 600-235  
Subject: Inorganic - Data Package No. H2736-LLI (SDG No. H2736)

## **INTRODUCTION**

This memo presents the results of data validation on Data Package No. H2736 -LLI 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	Waste Site	Analysis
J01T79	9/16/04	Soil	C	600-235	See note 1
J01T80	9/16/04	Soil	C	600-235	See note 1
J01T81	9/16/04	Soil	C	600-235	See note 1
J01T82	9/16/04	Soil	C	600-235	See note 1

1 - ICP metals; mercury by 7471A.

Data validation was conducted in accordance with the Bechtel Hanford Incorporated (BHI) validation statement of work and Sampling and Analysis Plan for Evaluation of Buried Lead-Sheathed Telephone Communications Cable (BHI-01714, Rev. 0, March 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 as follows: Soil samples must be analyzed within 28 days for mercury and 6 months for ICP metals.

000001

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

No field blanks were submitted for analysis.

- **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 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.

000002

All matrix spike recovery 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

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the BHI-01714 detection limits (DLs) to ensure that laboratory detection levels meet the required criteria. All reported results met the analyte specific DL.

- **Completeness**

Data package No. H2736-LLI 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.

000003

## REFERENCES

BHI, MRB-SBB-A23665, *Validation Statement of Work*, Bechtel Hanford Incorporated, September 5, 1997.

BHI-01714, Rev. 0, *Sampling and Analysis Plan for Evaluation of Buried Lead-Sheathed Telephone Communications Cable*, March 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

INORGANIC DATA QUALIFICATION SUMMARY\*

SDG: H2736	REVIEWER: TLI	DATE: 11/19/04	PAGE 1 OF 1
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: BECHTEL-HANFORD													
Laboratory: LLI													
Case		SDG: H2736											
Sample Number		J01T79		J01T80		J01T81		J01T82					
Remarks													
Sample Date		9/16/04		9/16/04		9/16/04		9/16/04					
Inorganics	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Silver	1	0.27	U	0.28	U	0.26	U	0.27	U				
Arsenic	10	6.9		7.0		3.8		2.7					
Barium	2	73.6		84.3		60.2		66.0					
Cadmium	1	0.83		0.30		0.09	U	0.48					
Chromium	1	22.0		46.6		10.5		11.4					
Mercury	0.2	0.02	U	0.02	U	0.01	U	0.02	U				
Lead	5	34.2		15.0		3.8		3.3					
Selenium	10	1.2	U	1.2	U	1.1	U	1.2	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 10/06/04

CLIENT: TNUHANFORD B04-016 H2736

LVL LOT #: 0409L678

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J01T79	Silver, Total	0.27	u MG/KG	0.27	3.0
		Arsenic, Total	6.9	MG/KG	1.1	3.0
		Barium, Total	73.6	MG/KG	2.0	6.0
		Cadmium, Total	0.83	MG/KG	0.09	3.0
		Chromium, Total	22.0	MG/KG	0.18	3.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Lead, Total	34.2	MG/KG	0.58	3.0
		Selenium, Total	1.2	u MG/KG	1.2	3.0
		-002	J01T80	Silver, Total	0.28	u MG/KG
Arsenic, Total	7.0			MG/KG	1.1	3.0
Barium, Total	84.3			MG/KG	2.0	6.0
Cadmium, Total	0.30			MG/KG	0.09	3.0
Chromium, Total	46.6			MG/KG	0.19	3.0
Mercury, Total	0.02			u MG/KG	0.02	1.0
Lead, Total	15.0			MG/KG	0.59	3.0
Selenium, Total	1.2			u MG/KG	1.2	3.0
-003	J01T81			Silver, Total	0.26	u MG/KG
		Arsenic, Total	3.8	MG/KG	1.1	3.0
		Barium, Total	60.2	MG/KG	1.9	6.0
		Cadmium, Total	0.09	u MG/KG	0.09	3.0
		Chromium, Total	10.5	MG/KG	0.18	3.0
		Mercury, Total	0.01	u MG/KG	0.01	1.0
		Lead, Total	3.8	MG/KG	0.56	3.0
		Selenium, Total	1.1	u MG/KG	1.1	3.0
		-004	J01T82	Silver, Total	0.27	u MG/KG
Arsenic, Total	2.7			MG/KG	1.1	3.0
Barium, Total	66.0			MG/KG	2.0	6.0
Cadmium, Total	0.48			MG/KG	0.09	3.0
Chromium, Total	11.4			MG/KG	0.18	3.0
Mercury, Total	0.02			u MG/KG	0.02	1.0
Lead, Total	3.3			MG/KG	0.56	3.0
Selenium, Total	1.2			u MG/KG	1.2	3.0

*DR*  
11/15/04

000011

**Appendix 4**

**Laboratory Narrative and Chain-of-Custody Documentation**

**000012**



**Analytical Report**

Client: TNU-HANFORD B04-016  
LVL#: 0409L678  
SDG/SAF#: H2736/B04-016

W.O.#: 11343-606-001-9999-00  
Date Received: 09-18-04

**METALS CASE NARRATIVE**

1. This narrative covers the analyses of 4 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. All samples were run with 3-fold dilutions (6-fold dilutions for Barium) for ICP metals due to sample matrix.
3. All analyses were performed within the required holding times.
4. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of CCV2 for Barium in file TA0923B. All samples were rerun for Barium in file PS0924B.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within 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.
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.
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.

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 16 pages.

000013



0404678

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			B04-016-05	Page 1 of 1
Collector Renee Nielson / C. Rivera	Company Contact Wendy Thompson	Telephone No. 372-9597	Project Coordinator KESSNER, JH		Price Code 8J	Data Turnaround 7 Days
Project Designation Lead-Sheathed Telephone Communication Cable Sampling	Sampling Location North Slope in the Floodplain of Columbia River		SAF No. B04-016		Air Quality <input type="checkbox"/>	
Ice Chest No. DH1 94	Field Logbook No. EL-1517-4	COA BRASC11P10		Method of Shipment Federal Express		
Shipped To LVL1 BERLINE SERVICES (Formerly TMA)	Offsite Property No. A040228		Bill of Lading/Air Bill No. SEE OSPC			

POSSIBLE SAMPLE HAZARDS/REMARKS	Special Handling and/or Storage	Preservation	None	Cool 4C	Cool 4C								
		Type of Container	aG	aG	aG								
		No. of Container(s)	1	1	1								
		Volume	250mL	250mL	250mL								
SAMPLE ANALYSIS		See item (1) in Special Instructions.	PAHs - 8310	PCBs - 8082									
Sample No.	Matrix *	Sample Date	Sample Time										
J01T79	SOIL	9-16-04	1101	X	X	X							
J01T80	SOIL	9-16-04	1116	X	X	X							

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>			<b>Matrix *</b>
Relinquished By/Removed From Renee Nielson 9/16/04	Date/Time 1500	Received By/Stored In Ref # 2c 3728	Date/Time 9/16/04	(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7470 - (CV)  Personnel not available to relinquish samples from 3728 Ref # 2c on 9/17/04  Samples did not originate in radiological controlled area. No total activity associated with sample/samples.			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
Relinquished By/Removed From REF 2C 3728	Date/Time 9/17/04 0900	Received By/Stored In SIOALEM	Date/Time 9/17/04 0900				
Relinquished By/Removed From SIOALEM	Date/Time 9/17/04 0900	Received By/Stored In FED EX	Date/Time				
Relinquished By/Removed From FED EX	Date/Time 9-18-04 1005	Received By/Stored In W. Herms	Date/Time 9/18/04 1005				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
<b>LABORATORY SECTION</b>	Received By	Title					Date/Time
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method	Disposed By					Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B04-016-06		Page 1 of 1			
Collector Renee Nielson / C. Rivera		Company Contact Wendy Thompson		Telephone No. 372-9597		Project Coordinator KESSNER, JH		Price Code 8J		Data Turnaround		
Project Designation Lead-Sheathed Telephone Communication Cable Sampling -		Sampling Location North Slope on Bluff Above the Floodplain			SAF No. B04-016		Air Quality <input type="checkbox"/>		7 Days			
Ice Chest No. BH1 94		Field Logbook No. EL-1517-4		COA BRASCI1P10		Method of Shipment Federal Express						
Shipped To LVL1 <del>BERLINE SERVICES (Formerly TMA)</del>		Offsite Property No. A040 228			Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	Cool 4C	Cool 4C					
				Type of Container	aG	aG	aG					
				No. of Container(s)	1	1	1					
				Volume	250mL	250mL	250mL					
SAMPLE ANALYSIS				See item (1) in Special Instructions.	PAHs - 8310	PCBs - 8082						
Sample No.	Matrix *	Sample Date	Sample Time									
J01T81	SOIL	9-16-04	1151	X	X	X						
J01T82	SOIL	9-16-04	1200	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names			SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From Renee Nielson		Date/Time 9/16/04 1500		Received By/Stored In KOC # 2C 3728		Date/Time 9/16/04 1500		(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7470 - (CV)  Personnel not available to Relinquish samples from 3728 Ref # 2C on 9/17/04  Samples did not originate in radiological controlled area. No total activity associated with sample/samples.				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
Relinquished By/Removed From REF 2C 3728		Date/Time 9/17/04 0900		Received By/Stored In SHALE M. Sch		Date/Time 9/17/04 0900						
Relinquished By/Removed From SJA/ALD		Date/Time 9/17/04 0900		Received By/Stored In FED EX		Date/Time						
Relinquished By/Removed From Fed Ex		Date/Time 9-18-04 1005		Received By/Stored In V. Henning		Date/Time 9-18-04 1005						
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						

000015

**Appendix 5**

**Data Validation Supporting Documentation**

**000017**

**INORGANIC ANALYSIS DATA VALIDATION CHECKLIST**

ALIDATION LEVEL:	A	B	<b>C</b>	D	E
PROJECT:	LSTCC 600-235		DATA PACKAGE: H2736		
VALIDATOR:	TLI	LAB:	LLP	DATE: 11/12/04	
			SDG:	H2736	
ANALYSES PERFORMED					
<b>SW-846/ICP</b>	SW-846/GFAA	<b>SW-846/Hg</b>	SW-846 Cyanide		
SAMPLES/MATRIX					
J01779 J01780 J01781 J01782					
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: NO FB

**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 PAS

**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? .....	<input checked="" type="radio"/> Yes	No	N/A
Sample holding times acceptable? .....	<input checked="" type="radio"/> 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**

**000023**

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/06/04

CLIENT: TNUHANFORD B04-016 H2736  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L678

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	04L0592-MB1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	0.36 u	MG/KG	0.36	1.0
		Barium, Total	0.33 u	MG/KG	0.33	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.06 u	MG/KG	0.06	1.0
		Lead, Total	0.19 u	MG/KG	0.19	1.0
		Selenium, Total	0.39 u	MG/KG	0.39	1.0
BLANK1	04C0217-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

000024

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/06/04

CLIENT: TNUHANFORD B04-016 H2736  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L678

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J01T79	Silver, Total	4.7	0.27u	4.9	95.9	3.0
		Arsenic, Total	178	6.9	195	87.4	3.0
		Barium, Total	274	73.6	195	102.7	6.0
		Cadmium, Total	5.5	0.83	4.9	95.2	3.0
		Chromium, Total	41.7	22.0	19.5	101.0	3.0
		Mercury, Total	0.19	0.02u	0.16	117.0	1.0
		Lead, Total	75.0	34.2	48.9	83.4	3.0
		Selenium, Total	181	1.2 u	195	92.5	3.0

000025

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/06/04

CLIENT: TNUHANFORD B04-016 H2736

LVL LOT #: 0409L678

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

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE	RPD	
-001REP	J01F79	Silver, Total	0.27u	0.27u	NC	3.0
		Arsenic, Total	6.9	5.1	30.0	3.0
		Barium, Total	73.6	69.7	5.4	6.0
		Cadmium, Total	0.83	0.78	6.9	3.0
		Chromium, Total	22.0	23.8	7.9	3.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Lead, Total	34.2	31.1	9.5	3.0
		Selenium, Total	1.2 u	1.2 u	NC	3.0

000026

00000011

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/06/04

CLIENT: TNUHANFORD B04-016 H2736

LVL LOT #: 04091678

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

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	04L0592-LC1	Silver, LCS	49.2	50.0	MG/KG	98.4
		Arsenic, LCS	951	1000	MG/KG	95.1
		Barium, LCS	505	500	MG/KG	101.1
		Cadmium, LCS	24.1	25.0	MG/KG	96.4
		Chromium, LCS	50.0	50.0	MG/KG	100
		Lead, LCS	242	250	MG/KG	96.8
		Selenium, LCS	942	1000	MG/KG	94.2
LCS1	04C0217-LC1	Mercury, LCS	6.6	6.2	MG/KG	106.3

000027

Date: 19 November 2004  
To: Bechtel Hanford Inc. (technical representative)  
From: TechLaw, Inc.  
Project: Lead-Sheathed Telephone Communication Cable Sampling - Other Solid -  
Waste Site 600-235  
Subject: PCB - Data Package No. H2736-LLI (SDG No. H2736)

## **INTRODUCTION**

This memo presents the results of data validation on Data Package No. H2736 -LLI 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	Waste Site	Analysis
J01T79	9/16/04	Soil	C	600-235	See note 1
J01T80	9/16/04	Soil	C	600-235	See note 1
J01T81	9/16/04	Soil	C	600-235	See note 1
J01T82	9/16/04	Soil	C	600-235	See note 1

1 - PCBs by 8082

Data validation was conducted in accordance with the Bechtel Hanford Incorporated (BHI) validation statement of work and Sampling and Analysis Plan for Evaluation of Buried Lead-Sheathed Telephone Communications Cable (BHI-01714, Rev. 0, March 2004). Appendices 1 through 5 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

## **DATA QUALITY OBJECTIVES**

- **Holding Times**

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

000001

If holding times are exceeded by less than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required detection limit (DL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the DL.

All method blank target compound results were acceptable.

#### Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

#### Matrix Spike & 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 50% to 150% (laboratory CLP limits for chlorinated pesticides). If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

All accuracy spike results were acceptable.

### Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

- **Precision**

### Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All matrix spike/matrix spike duplicate results were acceptable.

### Field Duplicate Samples

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the BHI-01714 detection limits (DLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the DL.

- **Completeness**

Data Package No. H2736-LLI 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**

BHI, MRB-SBB-A23665, *Validation Statement of Work*, Bechtel Hanford Incorporated, September 5, 1997.

BHI-01714, Rev. 0, *Sampling and Analysis Plan for Evaluation of Buried Lead-Sheathed Telephone Communications Cable*, March 2004.

**Appendix 1**

**Glossary of Data Reporting Qualifiers**

000005

Qualifiers which may be applied by data validators in compliance with the procedures herein 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 quantitation limit is an estimate.
- 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).

**Appendix 2**

**Summary of Data Qualification**

000007

PCB DATA QUALIFICATION SUMMARY\*

SDG: H2736	REVIEWER: TLI	DATE: 11/19/04	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**

<b>Project: BECHTEL-HANFORD</b>													
<b>Laboratory: Lionville Laboratory Inc.</b>													
<b>Case:</b>		<b>SDG: H2736</b>											
<b>Sample Number</b>		J01T79		J01T80		J01T81		J01T82					
<b>Remarks</b>													
<b>Sample Date</b>		9/16/04		9/16/04		9/16/04		9/16/04					
<b>Extraction Date</b>		9/21/04		9/21/04		9/21/04		9/21/04					
<b>Analysis Date</b>		9/24/04		9/24/04		9/24/04		9/24/04					
<b>PCB</b>	<b>RQL</b>	<b>Result</b>	<b>Q</b>	<b>Result</b>	<b>Q</b>	<b>Result</b>	<b>Q</b>	<b>Result</b>	<b>Q</b>	<b>Result</b>	<b>Q</b>	<b>Result</b>	<b>Q</b>
Aroclor-1016	20	14	U	14	U	13	U	13	U				
Aroclor-1221	20	14	U	14	U	13	U	13	U				
Aroclor-1232	20	14	U	14	U	13	U	13	U				
Aroclor-1242	20	14	U	14	U	13	U	13	U				
Aroclor-1248	20	14	U	14	U	13	U	13	U				
Aroclor-1254	20	14	U	14	U	13	U	13	U				
Aroclor-1260	20	14	U	14	U	13	U	13	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.

RFW Batch Number: 0409L678

Client: TNU-HANFORD B04-016

Work Order: 11343606001 Page: 1

Sample Information	Cust ID:	J01T79	J01T79	J01T79	J01T80	J01T81	J01T82
	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	96 %	96 %	85 %	96 %	79 %	91 %
	Decachlorobiphenyl	94 %	97 %	84 %	94 %	80 %	90 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Aroclor-1016		14 U	99 %	86 %	14 U	13 U	13 U
Aroclor-1221		14 U	14 U	14 U	14 U	13 U	13 U
Aroclor-1232		14 U	14 U	14 U	14 U	13 U	13 U
Aroclor-1242		14 U	14 U	14 U	14 U	13 U	13 U
Aroclor-1248		14 U	14 U	14 U	14 U	13 U	13 U
Aroclor-1254		14 U	14 U	14 U	14 U	13 U	13 U
Aroclor-1260		14 U	90 %	85 %	14 U	13 U	13 U

000011

Sample Information	Cust ID:	PBLKXB	PBLKXB BS	PBLKXB BSD
	RFW#:	04LE1195-MB1	04LE1195-MB1	04LE1195-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	76 %	85 %	84 %
	Decachlorobiphenyl	79 %	87 %	84 %
		-----fl-----	-----fl-----	-----fl-----
Aroclor-1016		13 U	77 %	89 %
Aroclor-1221		13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U
Aroclor-1254		13 U	13 U	13 U
Aroclor-1260		13 U	88 %	91 %

*K*  
11/15/04

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

**Appendix 4**

**Laboratory Narrative and Chain-of-Custody Documentation**

**000012**



## Analytical Report

Client: TNU HANFORD B04-016

LVL#: 0409L678

SDG/SAF#: H2736/B04-016

W.O.#: 11343-606-001-9999-00

Date Received: 09-18-2004

### PCB

Four (4) soil samples were collected on 09-16-2004.

The samples and their associated QC samples were extracted on 09-21-2004 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 09-24-2004. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Samples and their associated QC samples received Silica Gel, Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3630C, 3660A and 3665A respectively.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy 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

10/9/04  
Date

sonr:\group\data\pest\tnu hanford\0409-678.pcb

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages.

000013

00000002

04042678

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B04-016-05	Page 1 of 1
Collector Renee Nielson / <i>C. Rivera</i>	Company Contact Wendy Thompson	Telephone No. 372-9597	Project Coordinator KESSNER, JH		Price Code 8J	Data Turnaround 7 Days
Project Designation Lead-Sheathed Telephone Communication Cable Sampling -	Sampling Location North Slope in the Floodplain of Columbia River		SAF No. B04-016		Air Quality <input type="checkbox"/>	
Ice Chest No. <i>BH1 94</i>	Field Logbook No. EL-1517-4	COA BRASCI1P10	Method of Shipment Federal Express			
Shipped To <i>LVL</i> BERLIN SERVICES (Formerly TMA)		Offsite Property No. <i>A040228</i>	Bill of Lading/Air Bill No. <i>BEE OSPC</i>			

POSSIBLE SAMPLE HAZARDS/REMARKS	Special Handling and/or Storage	Preservation	None	Cool 4C	Cool 4C							
		Type of Container	aG	aG	aG							
		No. of Container(s)	1	1	1							
		Volume	250mL	250mL	250mL							
SAMPLE ANALYSIS		See item (1) in Special Instructions.	PAHs - 8310	PCBs - 8082								
Sample No.	Matrix *	Sample Date	Sample Time									
J01T79	SOIL	9-16-04	1101	X	X	X						
J01T80	SOIL	9-16-04	1116	X	X	X						

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <i>Renee Nielson</i>	Date/Time 9/16/04 1500	Received By/Stored In <i>REF #2C</i>	Date/Time 9/16/04 1500	(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7470 - (CV)  Personnel not available to relinquish samples from 3728 Ref #2C on 9/17/04  Samples did not originate in radiological controlled area. No total activity associated with sample/samples.		S=Soil SS=Soil/sediment SO=Soil/s SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>REF #2C</i>	Date/Time 9/17/04 0900	Received By/Stored In <i>SIOLE</i>	Date/Time 9/17/04 0900			
Relinquished By/Removed From <i>SIOLE</i>	Date/Time 9/17/04 0900	Received By/Stored In <i>FED EX</i>	Date/Time			
Relinquished By/Removed From <i>FED EX</i>	Date/Time 9-18-04 1005	Received By/Stored In <i>T. Neerung</i>	Date/Time 9-18-04 1005			
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		

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			B04-016-06	Page 1 of 1
Collector Renee Nielson / <i>C. Rivera</i>	Company Contact Wendy Thompson	Telephone No. 372-9597	Project Coordinator KESSNER, JH		Price Code 8J	Data Turnaround 7 Days
Project Designation Lead-Sheathed Telephone Communication Cable Sampling -		Sampling Location North Slope on Bluff Above the Floodplain		SAF No. B04-016	Air Quality <input type="checkbox"/>	
Ice Chest No. <i>BH1 94</i>	Field Logbook No. EL-1517-4	COA BRASC11P10	Method of Shipment Federal Express			
Shipped To <del>EDERLINE SERVICES (Formerly TMA)</del> <i>LVL1</i>		Offsite Property No. <i>A040 228</i>		Bill of Lading/Air Bill No. <i>SEE OSC</i>		

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	Cool 4C	Cool 4C						
	Type of Container	aG	aG	aG						
	No. of Container(s)	1	1	1						
	Volume	250mL	250mL	250mL						
Special Handling and/or Storage										
000017	SAMPLE ANALYSIS		See item (1) in Special Instructions.	PAHs - 8310	PCBs - 8082					
	Sample No.	Matrix *	Sample Date	Sample Time						
	J01T81	SOIL	9-16-04	1151	X	X	X			
	J01T82	SOIL	9-16-04	1200	X	X	X			

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <i>Renee Nielson</i>	Date/Time 9/16/04 1500	Received By/Stored In <i>KAC # 2C 3728</i>	Date/Time 9/16/04 1500	(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7470 - (CV)  Personnel not available to Relinquish samples from 3728 Ref # <i>2C</i> on <i>9/17/04</i>  Samples did not originate in radiological controlled area. No total activity associated with sample/samples. <i>PN</i>		S=Soil SE=Soil/Stream SO=Solid Sl=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>REF 2C 3728</i>	Date/Time 9/17/04 0900	Received By/Stored In <i>STATE MASH</i>	Date/Time 9/17/04 0900			
Relinquished By/Removed From <i>SJH/MLP</i>	Date/Time 9/17/04 0900	Received By/Stored In <i>FED EX</i>	Date/Time			
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time 9-18-04 1005	Received By/Stored In <i>V. Downing</i>	Date/Time 9-18-04 1005			
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**

**000016**

**PESTICIDE/PCB DATA VALIDATION CHECKLIST**

VALIDATION LEVEL:	A	B	<b>C</b>	D	E
PROJECT:	LSTCC 600-235		DATA PACKAGE: H2736		
VALIDATOR:	TCL	LAB:	LLI	DATE: 11/12/04	
			SDG:	H2736	
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	<b>SW-846 8082</b>	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J01T79 J01T80 J01T81 J01T82					
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 acceptable? ..... Yes No **N/A**

Continuing calibrations acceptable? ..... Yes No **N/A**

Standards traceable? ..... Yes No **N/A**

Standards expired? ..... Yes No **N/A**

Calculation check acceptable? ..... Yes No **N/A**

DDT and endrin breakdowns acceptable? ..... Yes No **N/A**

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**PESTICIDE/PCB DATA VALIDATION CHECKLIST**

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

Calibration blanks analyzed? (Levels D, E)..... Yes No N/A  
Calibration blank 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/trip blanks analyzed? (Levels C, D, E)..... Yes No N/A  
Field/trip blank results acceptable? (Levels C, D, E)..... Yes No N/A  
Transcription/calculation errors? (Levels D, E)..... Yes No N/A  
Comments: No FB

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

Surrogates analyzed? ..... Yes No N/A  
Surrogate recoveries acceptable?..... Yes No N/A  
Surrogates traceable? (Levels D, E)..... Yes No N/A  
Surrogates expired? (Levels D, E)..... Yes No N/A  
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 PA5

**PESTICIDE/PCB 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. SYSTEM PERFORMANCE (Levels D and E)**

- Chromatographic performance acceptable? ..... Yes No  N/A
- Positive results resolved acceptably? ..... Yes No  N/A

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**7. HOLDING TIMES (all levels)**

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

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**PESTICIDE/PCB DATA VALIDATION CHECKLIST**

**8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)**

- Compound identification acceptable? (Levels D, E) ..... Yes No  N/A
- Compound quantitation acceptable? (Levels D, E) ..... Yes No  N/A
- 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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**9. SAMPLE CLEANUP (Levels D and E)**

- Fluorilil ® (or other absorbent) cleanup performed? ..... Yes No  N/A
- Lot check performed? ..... Yes No  N/A
- Check recoveries acceptable? ..... Yes No  N/A
- GPC cleanup performed? ..... Yes No  N/A
- GPC check performed? ..... Yes No  N/A
- GPC check recoveries acceptable? ..... Yes No  N/A
- GPC calibration performed? ..... Yes No  N/A
- GPC calibration check performed? ..... Yes No  N/A
- GPC calibration check retention times acceptable? ..... Yes No  N/A
- Check/calibration materials traceable? ..... Yes No  N/A
- Check/calibration materials Expired? ..... Yes No  N/A
- Analytical batch QC given similar cleanup? ..... Yes No  N/A
- Transcription/Calculation Errors? ..... Yes No  N/A

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_