0054755 H1224

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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-035 H1224

DATE RECEIVED: 01/25/01 LVL LOT # :0101L835

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11879						
SILVER, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
SILVER, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
SILVER, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
ALUMINUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
ALUMINUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
ALUMINUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
ARSENIC, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
ARSENIC, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
ARSENIC, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
BARIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
BARIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
BARIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
BERYLLIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
BERYLLIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
BERYLLIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
CALCIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
CALCIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
CALCIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
CADMIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
CADMIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
CADMIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
COBALT, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
COBALT, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
COBALT, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
CHROMIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
CHROMIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
CHROMIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
COPPER, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
COPPER, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
COPPER, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
IRON, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
IRON, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
IRON, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
MERCURY, TOTAL	001	SO	01C0040	01/24/01	01/30/01	01/31/01
MERCURY, TOTAL	001 REP	SO	01C0040	01/24/01	01/30/01	01/31/01

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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-035 H1224

DATE RECEIVED: 01/25/01 LVL LOT # :0101L835

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	001 MS	SO	01C0040	01/24/01	01/30/01	01/31/01
POTASSIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
POTASSIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
POTASSIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
MAGNESIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
MAGNESIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
MAGNESIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
MANGANESE, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
MANGANESE, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
MANGANESE, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
SODIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
SODIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
SODIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
NICKEL, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
NICKEL, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
NICKEL, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
LEAD, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
LEAD, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
LEAD, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
ANTIMONY, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
ANTIMONY, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
ANTIMONY, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
SELENIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
SELENIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
SELENIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
THALLIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
THALLIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
THALLIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
VANADIUM, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
VANADIUM, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
VANADIUM, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01
ZINC, TOTAL	001	SO	01L0038	01/24/01	02/02/01	02/07/01
ZINC, TOTAL	001 REP	SO	01L0038	01/24/01	02/02/01	02/07/01
ZINC, TOTAL	001 MS	SO	01L0045	01/24/01	02/02/01	02/09/01

LAB QC:

SILVER LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-035 H1224

DATE RECEIVED: 01/25/01 LVL LOT # :0101L835

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
SILVER LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
SILVER, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
ALUMINUM LABORTORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
ALUMINUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
ALUMINUM LABORTORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
ALUMINUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
ARSENIC LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
ARSENIC, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
ARSENIC LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
ARSENIC, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
BARIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
BARIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
BARIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
BARIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
BERYLLIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
BERYLLIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
BERYLLIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
BERYLLIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
CALCIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
CALCIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
CALCIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
CALCIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
CADMIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
CADMIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
CADMIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
CADMIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
COBALT LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
COBALT, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
COBALT LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
COBALT, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
CHROMIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
CHROMIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
CHROMIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
CHROMIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
COPPER LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
COPPER, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
COPPER LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-035 H1224

DATE RECEIVED: 01/25/01 LVL LOT # :0101L835

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
IRON LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
IRON, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
IRON LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
IRON, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
MERCURY LABORATORY	LC1 BS	S	01C0040	N/A	01/30/01	01/31/01
MERCURY, TOTAL	MB1	S	01C0040	N/A	01/30/01	01/31/01
POTASSIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
POTASSIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
POTASSIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
POTASSIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
MAGNESIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
MAGNESIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
MAGNESIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
MAGNESIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
MANGANESE LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
MANGANESE, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
MANGANESE LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
MANGANESE, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
SODIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
SODIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
SODIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
SODIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
NICKEL LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
NICKEL, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
NICKEL LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
NICKEL, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
LEAD LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
LEAD, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
LEAD LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
LEAD, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
ANTIMONY LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
ANTIMONY, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
ANTIMONY LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
ANTIMONY, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
SELENIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
SELENIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
SELENIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01

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TNUHANFORD B01-035 H1224

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SELENIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
THALLIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
THALLIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
THALLIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
THALLIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
VANADIUM LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
VANADIUM, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
VANADIUM LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
VANADIUM, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01
ZINC LABORATORY	LC1 BS	S	01L0038	N/A	02/02/01	02/07/01
ZINC, TOTAL	MB1	S	01L0038	N/A	02/02/01	02/07/01
ZINC LABORATORY	LC1 BS	S	01L0045	N/A	02/08/01	02/09/01
ZINC, TOTAL	MB1	S	01L0045	N/A	02/08/01	02/09/01

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-035
LVL#: 0101L835
SDG/SAF#: H1224/B01-035

W.O.#: 10985-001-001-9999-00
Date Received: 01-25-01

METALS CASE NARRATIVE

1. This narrative covers the analyses of 1solid sample.

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.

The matrix spike was inadvertantly not added to the sample during the digestion procedure in the initial preparation batch (01L0038). The matrix spike sample was subsequently redigested in preparation batch 01L0045.

The replicate of sample B11879 read more negative than the PQL for Beryllium. The concentration of IEC's (Interelement Correction) in this sample were less than that found in the ICP Interference Check Standards.

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

4. The cooler temperature has been recorded on the Chain of Custody.

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

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

7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, 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. The matrix spike (MS) recoveries for 6 analytes were outside the 75-125% control limits.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 18 pages.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration levels, due to high concentrations of the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
B11879	Silver	500	102.5
	Aluminum	25,000	83.1
	Calcium	25,000	105.5
	Iron	15,000	89.6
	Antimony	500	99.6
	Zinc	500	93.4

12. The duplicate analyses for 9 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

13. 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.

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.

15. As of January 27, 2001, Recra LabNet Philadelphia became Lionville Laboratory Incorporated. Some forms may still reference Recra LabNet Philadelphia.

J. Michael Taylor
President
Lionville Laboratory Incorporated

02-20-01
Date

jjw/m01-835

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 0101L835

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

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

Other:_____ **Method:**_____

L-WI-033/M-11/99

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).

4. Flame AA.

5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/20/01

CLIENT: TNUHANFORD B01-035 H1224 LVL LOT #: 0101L835

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B11879	Silver, Total	10.3	MG/KG	0.11	1.0
		Aluminum, Total	25100	MG/KG	2.3	1.0
		Arsenic, Total	2.6	MG/KG	0.24	1.0
		Barium, Total	134	MG/KG	0.02	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Calcium, Total	4440	MG/KG	1.9	1.0
		Cadmium, Total	0.1	MG/KG	0.03	1.0
		Cobalt, Total	6.3	MG/KG	0.09	1.0
		Chromium, Total	16.5	MG/KG	0.06	1.0
		Copper, Total	23.2	MG/KG	0.09	1.0
		Iron, Total	17700	MG/KG	2.2	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	1170	MG/KG	4.1	1.0
		Magnesium, Total	3390	MG/KG	0.68	1.0
		Manganese, Total	273	MG/KG	0.02	1.0
		Sodium, Total	1000	MG/KG	0.41	1.0
		Nickel, Total	11.5	MG/KG	0.09	1.0
		Lead, Total	18.7	MG/KG	0.21	1.0
		Antimony, Total	0.25	MG/KG	0.23	1.0
		Selenium, Total	0.80	MG/KG	0.33	1.0
		Thallium, Total	0.40 u	MG/KG	0.40	1.0
		Vanadium, Total	57.5	MG/KG	0.08	1.0
		Zinc, Total	690	MG/KG	0.04	1.0

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/20/01

CLIENT: TNUHANFORD B01-035 H1224 LVL LOT #: 0101L835

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	01L0038-MB1	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Aluminum, Total	2.3 u	MG/KG	2.3	1.0
		Arsenic, Total	0.24 u	MG/KG	0.24	1.0
		Barium, Total	0.02 u	MG/KG	0.02	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Calcium, Total	1.9 u	MG/KG	1.9	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Cobalt, Total	0.09 u	MG/KG	0.09	1.0
		Chromium, Total	0.1	MG/KG	0.06	1.0
		Copper, Total	0.09 u	MG/KG	0.09	1.0
		Iron, Total	2.2 u	MG/KG	2.2	1.0
		Potassium, Total	4.1 u	MG/KG	4.1	1.0
		Magnesium, Total	0.67 u	MG/KG	0.67	1.0
		Manganese, Total	0.02 u	MG/KG	0.02	1.0
		Sodium, Total	1.2	MG/KG	0.41	1.0
		Nickel, Total	0.09 u	MG/KG	0.09	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0
		Antimony, Total	0.24	MG/KG	0.23	1.0
		Selenium, Total	0.33 u	MG/KG	0.33	1.0
		Thallium, Total	0.40 u	MG/KG	0.40	1.0
		Vanadium, Total	0.08 u	MG/KG	0.08	1.0
		Zinc, Total	0.04 u	MG/KG	0.04	1.0
BLANK1	01L0045-MB1	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Aluminum, Total	4.0	MG/KG	2.3	1.0
		Arsenic, Total	0.24 u	MG/KG	0.24	1.0
		Barium, Total	0.04	MG/KG	0.02	1.0
		Beryllium, Total	0.02	MG/KG	0.01	1.0
		Calcium, Total	1.9 u	MG/KG	1.9	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Cobalt, Total	0.09 u	MG/KG	0.09	1.0
		Chromium, Total	0.06 u	MG/KG	0.06	1.0
		Copper, Total	0.09 u	MG/KG	0.09	1.0
		Iron, Total	2.2 u	MG/KG	2.2	1.0
		Potassium, Total	4.1 u	MG/KG	4.1	1.0
		Magnesium, Total	1.2	MG/KG	0.67	1.0
		Manganese, Total	0.05	MG/KG	0.02	1.0
		Sodium, Total	2.2	MG/KG	0.41	1.0
		Nickel, Total	0.09 u	MG/KG	0.09	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/20/01

CLIENT: TNUHANFORD B01-035 H1224 LVL LOT #: 0101L835

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	01L0045-MB1	Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.33 u	MG/KG	0.33	1.0
		Thallium, Total	0.40 u	MG/KG	0.40	1.0
		Vanadium, Total	0.08 u	MG/KG	0.08	1.0
		Zinc, Total	0.04 u	MG/KG	0.04	1.0
BLANK1	01C0040-MB1	Mercury, Total	0.02	MG/KG	0.02	1.0

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 02/20/01

CLIENT: TNUHANFORD B01-035 H1224 LVL LOT #: 0101L835

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B11879	Silver, Total	13.7	10.3	5.1	66.7	1.0
		Aluminum, Total	23000	25100	202	-1000. *	1.0
		Arsenic, Total	184	2.6	202	89.6	1.0
		Barium, Total	327	134	202	95.3	1.0
		Beryllium, Total	5.4	0.01u	5.1	105.9	1.0
		Calcium, Total	6050	4440	2530	64.0	1.0
		Cadmium, Total	4.6	0.1	5.1	88.3	1.0
		Cobalt, Total	52.0	6.3	50.6	90.3	1.0
		Chromium, Total	33.2	16.5	20.2	82.7	1.0
		Copper, Total	46.2	23.2	25.3	90.9	1.0
		Iron, Total	17400	17700	101	-290. *	1.0
		Mercury, Total	0.19	0.02u	0.17	113.6	1.0
		Potassium, Total	4000	1170	2530	111.8	1.0
		Magnesium, Total	5700	3390	2530	91.7	1.0
		Manganese, Total	314	273	50.6	80.2*	1.0
		Sodium, Total	3300	1000	2530	90.9	1.0
		Nickel, Total	55.5	11.5	50.6	87.0	1.0
		Lead, Total	57.9	18.7	50.6	77.5	1.0
		Antimony, Total	13.7	0.25	50.6	26.6	1.0
		Selenium, Total	181	0.80	202	89.0	1.0
		Thallium, Total	183	0.40u	202	90.7	1.0
		Vanadium, Total	99.9	57.5	50.6	83.8	1.0
		Zinc, Total	524	690	50.6	-330. *	1.0

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 02/20/01

CLIENT: TNUHANFORD B01-035 H1224 LVL LOT #: 0101L835

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B11879	Silver, Total	10.3	3.8	92.2	1.0
		Aluminum, Total	25100	17300	36.7	1.0
		Arsenic, Total	2.6	2.1	21.3	1.0
		Barium, Total	134	116	15.0	1.0
		Beryllium, Total	0.01u	0.01u	NC	1.0
		Calcium, Total	4440	3770	16.4	1.0
		Cadmium, Total	0.1	0.12	18.0	1.0
		Cobalt, Total	6.3	6.6	4.7	1.0
		Chromium, Total	16.5	13.2	22.2	1.0
		Copper, Total	23.2	22.5	3.1	1.0
		Iron, Total	17700	18900	6.4	1.0
		Mercury, Total	0.02u	0.02	~~NC~~ 200	1.0
		Potassium, Total	1170	1110	5.5 MY 2/22/01	1.0
		Magnesium, Total	3390	3410	0.66	1.0
		Manganese, Total	273	282	3.1	1.0
		Sodium, Total	1000	562	56.4	1.0
		Nickel, Total	11.5	9.8	16.0	1.0
		Lead, Total	18.7	13.0	36.0	1.0
		Antimony, Total	0.25	0.23u	~~NC~~ 200	1.0
		Selenium, Total	0.80	0.77	4.8 MY 2/20/01	1.0
		Thallium, Total	0.40u	0.40u	NC	1.0
		Vanadium, Total	57.5	54.8	4.8	1.0
		Zinc, Total	690	468	38.3	1.0

Lionville Lababoratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/20/01

CLIENT: TNUHANFORD B01-035 H1224 LVL LOT #: 0101LB35

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	01L0038-LC1	Silver, LCS	49.9	50.0	MG/KG	99.8
		Aluminum, LCS	504	500	MG/KG	100.8
		Arsenic, LCS	938	1000	MG/KG	93.8
		Barium, LCS	492	500	MG/KG	98.4
		Beryllium, LCS	24.1	25.0	MG/KG	96.4
		Calcium, LCS	2440	2500	MG/KG	97.5
		Cadmium, LCS	24.5	25.0	MG/KG	98.0
		Cobalt, LCS	249	250	MG/KG	99.8
		Chromium, LCS	50.2	50.0	MG/KG	100.4
		Copper, LCS	125	125	MG/KG	99.9
		Iron, LCS	500	500	MG/KG	100.0
		Potassium, LCS	2540	2500	MG/KG	101.6
		Magnesium, LCS	2480	2500	MG/KG	99.3
		Manganese, LCS	77.6	75.0	MG/KG	103.5
		Sodium, LCS	2420	2500	MG/KG	96.9
		Nickel, LCS	196	200	MG/KG	98.0
		Lead, LCS	243	250	MG/KG	97.3
		Antimony, LCS	293	300	MG/KG	97.6
		Selenium, LCS	903	1000	MG/KG	90.3
		Thallium, LCS	971	1000	MG/KG	97.1
		Vanadium, LCS	256	250	MG/KG	102.5
		Zinc, LCS	96.8	100	MG/KG	96.8
LCS1	01L0045-LC1	Silver, LCS	49.8	50.0	MG/KG	99.6
		Aluminum, LCS	510	500	MG/KG	102.1
		Arsenic, LCS	940	1000	MG/KG	94.0
		Barium, LCS	502	500	MG/KG	100.4
		Beryllium, LCS	24.6	25.0	MG/KG	98.4
		Calcium, LCS	2380	2500	MG/KG	95.4
		Cadmium, LCS	24.4	25.0	MG/KG	97.6
		Cobalt, LCS	248	250	MG/KG	99.0
		Chromium, LCS	49.8	50.0	MG/KG	99.6
		Copper, LCS	126	125	MG/KG	101.0
		Iron, LCS	496	500	MG/KG	99.1
		Potassium, LCS	2550	2500	MG/KG	101.8
		Magnesium, LCS	2470	2500	MG/KG	98.7
		Manganese, LCS	75.9	75.0	MG/KG	101.2
		Sodium, LCS	2450	2500	MG/KG	98.1
		Nickel, LCS	196	200	MG/KG	98.2
		Lead, LCS	244	250	MG/KG	97.8

Lionville Lababoratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/20/01

CLIENT: TNUHANFORD B01-035 H1224 LVL LOT #: 0101L835

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	01L0045-LC1	Antimony, LCS	295	300	MG/KG	98.3
		Selenium, LCS	934	1000	MG/KG	93.4
		Thallium, LCS	964	1000	MG/KG	96.4
		Vanadium, LCS	253	250	MG/KG	101.3
		Zinc, LCS	97.3	100	MG/KG	97.3
LCS1	01C0040-LC1	Mercury, LCS	2.9	2.5	MG/KG	118.2

RECRA LabNet Use Only

0101L835

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

SAF#

Client: TRU-Hanford B01-035

Est. Final Proj. Sampling Date

Project #: 10985-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager: DJ

QC: Spec Del: Std TAT: 21 day

Date Rec'd: 1-25-01 Date Due: 2-15-01

Account #

Refrigerator #										A								
#/Type Container	Liquid																	
	Solid									VAG								
Volume	Liquid																	
	Solid									60								
Preservatives										—								
ANALYSES REQUESTED		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb					Metal	CN							
RECRA LabNet Use Only										Met 1								

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected														
001	B11829	✓	✓	X	1-24-01	0715								1						

Special Instructions: SAF B01-035
X = OTHER SOLID

DATE/REVISIONS:
Met 1 1. Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K,
1 2. Mg, Mn, Na, Ni, Sb, V, Zn, As, Pb, Se,
3. Tl, Hg
4.
5.
6.

RECRA LabNet Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill # See Below

2) Ambient or Chilled

3) Received in Good Condition (Y) or N

4) Labels Indicate Properly Preserved (Y) or N

5) Received Within Holding Times (Y) or N

COC Tape was: 1) Present on Outer Package (Y) or N

2) Unbroken on Outer Package (Y) or N

3) Present on Sample (Y) or N

4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 3.6 °C

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 4235 7954 1849

Relinquished by	Received by	Date	Time
[signature]	[signature]	1-25-01	1030

Relinquished by	Received by	Date	Time
COMPOSITE WASTE			

ORIGINAL REWRITTEN

0101C835

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-035-19

Collector: Thomas	Company Contact: Lerch, JA — Telephone No.: 373-5904	Project Coordinator: TRENT, SJ	Price Code / Data Turnaround: 00
Project Designation: 100-IU-6 Waste Site Anomalous Waste Characterization	Sampling Location: JA Jones Dig Site #1	SAF No.: B01-035	Air Quality ☐
Ice Chest No.: ERC 96 036	Field Logbook No.: EI-1518 — COA: RJONES2600	Method of Shipment: FEDEX	
Shipped To: EMA/ECRA 1-23-01	Offsite Property No.: AQ10194	Bill of Lading/Air Bill No.: 42357954-1849	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. BT 1/24/01

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	60mL	60mL	60mL	60mL	60mL	60mL	60mL	60mL
SAMPLE ANALYSIS	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	Sulfides - 9030	Total Cyanide - 9010	VOA - 8260A (TCL)	Carbon-14	Gross Alpha; Gross Beta	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No. / Matrix * / Sample Date / Sample Time										
B11879 / OTHER SOLID / 1/24/01 / 0715										X

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 01/24/01. Collector not available to relinquish samples on 01/24/01 for shipment.

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Greg Thomas / Greg Thomas 1/24/01	0755	BT 1/24/01 / Stored in Ref 2B 1/24/01	0755
Ref 2B 01/24/01	1000	R. Fahlberg / R. Fahlberg 01-24-01	1000
R. Fahlberg / R. Fahlberg 01-24-01	1700	Fed Ex 01-24-01	1500
Fed Ex 1-25-01	1230	1-25-01	1230

SPECIAL INSTRUCTIONS

RT 1/24/01

(1) IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium); Mercury - 7471 - (CV)

None Rad Sample

Matrix *: S=Soil; SE=Sediment; SO=Solid; S=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

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

BHI-EE-011 (10/99)